DOCUMENT RESUME

ED 090 370 95 CE 001 207

AUTHOR Anderson, Miles H.
TITLE Development and Validation of Instructional Programs for the Allied Health Occupations. Final Report.
INSTITUTION California Univ., Los Angeles. Div. of Vocational Education.
SPONS AGENCY National Center for Educational Research and Development (DHEW/OE), Washington, D.C. Div. of Comprehensive and Vocational Education Research.
BUREAU NO BR-8-0627
PUB DATE Jul 73
GRANT OEG-0-8-080627-4672
NOTE 241p.

EDRS PRICE MF-$0.75 HC-$11.40 PLUS POSTAGE
DESCRIPTORS Curriculum Development; *Health Occupations Education; Instructional Materials; Medical Education; *Nursing; *Occupational Information; Performance Specifications; *Task Analysis
IDENTIFIERS Allied Health Professions Project; *Task Oriented Instructions

ABSTRACT

The Allied Health Professions Project at the University of California, Los Angeles, has developed a new approach to occupational and task analysis and an innovative task-oriented method of preparing instructional materials based on those analyses. Task inventories have been prepared and are available for 25 occupations. About one-third of the document is taken up with a detailed account of the methods and procedures used in the development of the occupational analysis for nursing, including discussion of the tabulated responses to the survey instrument used. The occupational analyses for 13 other allied health occupations are summarized. The instructional materials whose development has been the primary goal of the project are outlined. (SA)

ED 090370

Final Report

Project No. 8-0627

Grant No. OEG-0-8-080627-4672

Miles H. Anderson
University of California, Los Angeles
Division of Vocational Education
Allied Health Professions Project

DEVELOPMENT AND VALIDATION OF INSTRUCTIONAL PROGRAMS FOR THE ALLIED HEALTH OCCUPATIONS

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

July 1, 1973

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
National Center for Educational Research and Development

CE001207

Final Report

Project No. 8-0627
Grant No. OEG-0-8-080627-4672(085)

DEVELOPMENT AND VALIDATION OF INSTRUCTIONAL PROGRAMS FOR THE ALLIED HEALTH OCCUPATIONS

Miles H. Anderson

University of California, Los Angeles
Division of Vocational Education
Los Angeles, California

July 1, 1973

The research reported herein was performed pursuant to a Grant with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education policy.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education
National Center for Educational Research and Development

This publication was prepared pursuant to Grant No. 8-0627, Office of Education, U.S. Department of Health, Education, and Welfare, under the Vocational Education Act of 1963, as amended by Title I of the Vocational Education Amendments of 1968. Points of view or opinions expressed were developed on the basis of survey data. They do not, therefore, necessarily represent official Office of Education position or policy.

ABSTRACT

The ultimate purpose of the Allied Health Professions Project is to help people keep healthy. This is done by devising educational programs that enable allied health professionals in training to learn more about health care, in less time, and with greater retention. This improves health-care service, which helps people stay healthy or regain their health if they are ill.

The project based its program on the assumption that unquestionably great advances in health-care technology will be made continually, but that nonetheless, if every health worker at this moment was able to give his patient the benefit of all the best knowledge and skills we collectively have now at our disposal, the resulting improvement in health care would be very impressive.

The program undertook to devise a means for temporarily "freezing" the best knowledge and skill of an allied health profession as it existed during the span of the briefest possible time period, converting it into curricula and instructional materials, and using it on as broad a scale as feasible to train all present and future trainees to this optimum level. This accomplished, it is essential that new advances in health-care technology be added to the program as they are developed and proved useful and reliable.

PREFACE

The Allied Health Professions Project (AHPP) was initiated in 1968 by the University of California, Los Angeles, Division of Vocational Education, with a grant from the U.S. Office of Education, Bureau of Adult and Vocational Education. The program was designed to apply the principles of vocational education to the problems of curriculum and instructional materials development in the health occupations field for use in educating health workers ranging from on-the-job settings up to and including the Associate degree level in the community colleges. The materials were to be designed for use in preemployment as well as extension or upgrading programs, with emphasis on achieving improved articulation between educational levels, and thus a greater degree of career mobility.

Traditionally, vocational education has placed a high degree of reliance on the advice and assistance of advisory committees composed of experts from the occupations being served, and this policy was followed in every project undertaken. Much of the credit for any successes achieved must be given to the members of the advisory committees whose hard work and dedication were invaluable. Without them, little could have been accomplished. A roster of all the advisory committee members appears in Appendix A.

The most difficult problem in administering a grant program of relatively short duration is attracting high-quality, competent personnel. The AHPP was fortunate in obtaining the services of so many outstanding professionals and secretarial staff whose loyalty and devotion to the goals of the program were expressed in long hours of diligent work, frequently far beyond the call of duty. The names of all staff members who worked on the project are listed in Appendix B; we thank them for their contributions to the achievements of the program, and wish them well in their future endeavors.

In vocational education, we always work closely with the private sector, and in the case of this project, private publishers were asked to take over the publishing and distribution of the books and manuals produced. Because of copyright problems associated with publications developed with government funds, all AHPP books that have been commercially published were accepted without copyright. Our faith in private enterprise was vindicated, and we are grateful to the publishers who were willing to assist us by taking the risk of investing in a publication without copyright protection.

Our ability to carry out national surveys of the various health occupations successfully depended on the cooperation of more than sixty hospitals, extended-care facilities, medical laboratories, and dental facilities. The testing of completed instructional materials could not be done without the willing cooperation of scores of schools and colleges. For their sacrifices in time, energy, and inconvenience, we can never properly compensate them, but we acknowledge their contributions with thanks and hope that they will benefit by the use of some of the materials they helped to create.

A major difficulty of the short-term grant approach in the field of curriculum and instructional materials development is continuity of effort once the grant period is over. It was impossible to complete all the projects we started, and many that should have received attention were never begun. Those that were completed should be brought up to date as they become obsolete (due to technological advances). To derive the greatest benefit from the original investment when a program produces materials that are proved successful, provisions should be made for revising existing materials and for the development of new materials where needed. The health industry is rapidly becoming the largest in this country in terms of numbers of personnel and funds expended for health services. An activity of this magnitude warrants ongoing programs of curriculum and instructional materials development in vocational education, and it is our hope that support for such programs will be forthcoming.

Melvin L. Barlow, Ed.D.
Principal Investigator
Allied Health Professions Projects
Director, Division of Vocational Education
University of California, Los Angeles

Miles H. Anderson, Ed.D., Director
Allied Health Professions Projects
Division of Vocational Education
University of California, Los Angeles

TABLE OF CONTENTS

Page

PREFACE iii

I. INTRODUCTION 1
  A. Background 1
    Manpower Needs 1
    Need for Training Materials 3
    General Scope and Purpose 3
    Specific Objectives 4
  B. General Methodology 4
    General Organization 4
    Occupational Analysis 6
    Task Inventories 7
    National Surveys 7
    Survey Sites 7
    Designation of Respondents 7
    Other Data 8
  C. Development of Curricula 9
    Overall Results 10
    Task Inventories 11

II. METHODS AND PROCEDURES 13
  A. Occupational Analyses 13
  B. Procedures Used in Developing Occupational Analyses 14
    Task Identification 14
    Aims and Limitations of the Survey Instrument 16
    Other Data 17
    Selection of Respondents 18
      Selection of Hospitals 18
      Designation of Respondents 18
    Characteristics of Respondents 19
      Personal Characteristics 22
    Data Analysis 22
    Data Presentation 26
  C. Data Analysis by Functional Area 29
    1. Diversional Therapeutic and Assistance Activities 29
    2. Safety and Comfort 31
      Patient Protection 31
      Personal Hygiene and General Comfort 37
      Religious and Spiritual Care 40
      Patient Need for Movement 43
    3. Nutrition and Elimination 49
      Patient Need for Food and Fluids 49
      Patient Need for Elimination 53
      Patient Need for Oxygen Transport and Exchange 53

TABLE OF CONTENTS (Cont)

Page

4. Treatments, Procedures, Medications and Diagnostic Activities 59
    Treatments and Procedures 59
    Application of Heat, Cold, Medicated Therapeutic Agents 65
    Medications 69
    Diagnostic Activities 69
5. Observation and Communication 76
    Observation, Analysis, Interpretation 76
    Oral and Written Communication 81
6. Administration, Coordination, Housekeeping 81
    Administration and Coordination 91
    Housekeeping Functions 98
7. Concluding Remarks 104
    Nonnursing Functions 104
    The Nurses' Aide 104
    Differentiation of Nursing Functions Appropriate to All Personnel 105
    The Frequency Criterion 106
    The Relationship of Frequency, Criticality and Differentiation 107
    Background and Structural Variables 108
    Other Dimensions of Analysis 106
8. Addenda for Nursing Occupational Analysis 109
9. Procedures Used in Developing a Curriculum for the Nursing Occupations 123
10. Procedures Used in Developing Instructional Materials to Implement the Curriculum for the Nursing Occupations 130
    Evaluation of Instructional Materials 132

III. RESULTS 134
  A. AHPP Activities 134
    Committee Meeting Reports 134
    Publications for the Clinical Occupations 135
    Publications of the Supportive Occupations 137
    Publications for the Secondary Schools Allied Health Project 139
    Miscellaneous Publications 139
    Educational Activities 139
  B. Summary of Results 142
    Occupational Analyses 142
      A Study of the Electroencephalographic Technician's Occupation 142
      A Study of the Clinical Laboratory Occupations 143
      The Dental Auxiliary Occupational Analysis 144
      Gastroenterology Assistant Occupational Analysis 145
      A Study of Nursing Occupations 146
      A Career Model for the Nurse Practitioner 147
      Occupational Analysis: Hospital Radiological Technologist 147
      Occupational Analysis: Respiratory Care/Inhalation Therapy 148
      Survey of Practices in Hospital Pharmacies 149

TABLE OF CONTENTS (Cont)

Page

Occupational Analysis of Social Services in Medical-Care Facilities 149
Occupational Analysis: Engineering Maintenance 155
Occupational Analysis: Hospital Food Service 156
Occupational Analysis of Tasks Performed in a Medical Record Department 157
A Study of Purchasing Occupations in Health-Care Facilities 157
Occupational Analysis: Ward Administration 158
Occupational Analysis: Medical Office Assistant 159
C. Instructional Materials Based on Occupational Analyses 161
Nursing Skills for Allied Health Services 161
Procedures Used in Developing Curriculum for the Nursing Occupations ... 163
The Gastroenterology Assistant: A Laboratory Manual 165
A Manual for Lower Extremities Orthotics 166
Medical Record Filing (Terminal Digit and Alphabetical) 166
Contents, Assembling, and Analyzing Deficiencies of Medical Records 166
Instructional Units for Medical Transcribers 168
Health-Care Facility Purchasing 169
Dental Hygiene: Detection and Removal of Calculus................. 170
Fundamental Dental Laboratory Procedures 171
Fundamental Skills in the Clinical Laboratory: Specimen Processing 171
D. Instructional Materials for the Secondary Schools Allied Health Project...... 174
Evaluative Report on Phase I of the Secondary Schools Allied Health Project 174
Evaluative Report on Phase II of the Secondary Schools Allied Health Project 175
A New Source of Manpower 177
Introduction to Allied Health Careers.......................... 177
Program Guide for Development and Operation of Secondary School Allied Health Career Programs 178
Student Training Record Booklets 179
E. Miscellaneous Publications 179
The UCLA Allied Health Professions Project: The Background, the Programs, the People 179
Clinical Instructor Training Program Trainer's Manual 179
F. Distribution of Instructional Materials 181
G. Expenditures and Income From Publications 183
H. Distribution of Publications by Type of Institution 183
I. Distribution of Publications by States 184
J. Adoption of AHPP by Schools for School Use........................ 185

TABLE OF CONTENTS (Cont)

Page

IV. CONCLUSIONS 191
    A. Specific Objectives 191
    B. Achievement of Objectives 191

V. RECOMMENDATIONS 197

APPENDICES

A. Advisory Committees and Cooperating Institutions 199
B. Roster of All Staff Members From Start of Program 215
C. Excerpts From the EPI Allied Health Professions Project Interim Report (April 1972) 219

LIST OF TABLES

Table Page

1 Allied Health Occupations for Which Task Inventories Have Been Prepared 11
2 Number of Questionnaires Distributed and Number and Percent Responses Received, by Geographic Area 19
3 Response by Category of Nursing Personnel and Geographic Area 20
4 Description of Respondents by Position Title, by Type and Size of Hospital and Area of Patient Care 21
5 Description of Respondents by Position Title, Age, Sex, Marital Status, Income, Education, and Experience 23

Series of tables presenting appropriate level, frequency of task performance by category of personnel, percentage difference in frequency of task performance between categories of personnel, and criticality within the functional areas specified:

6 Diversional Therapeutic and Assistance Activities 30
7 Safety and Comfort: B-1. Patient Protection 33
8 Safety and Comfort: B-1. Patient Protection (Subtasks) 36
9 Safety and Comfort: B-2. Personal Hygiene and General Comfort 38
10 Safety and Comfort: B-2. Personal Hygiene and General Comfort (Subtasks) . 41
11 Safety and Comfort: B-3. Religious and Spiritual Care 42
12 Safety and Comfort: B-4. Patient Need for Movement 44
13 Safety and Comfort: B-4. Patient Need for Movement (Subtasks) 46
14 Nutrition and Elimination: C-1. Patient Need for Food and Fluids 48
15 Nutrition and Elimination: C-1. Patient Need for Food and Fluids (Subtasks). 50
16 Nutrition and Elimination: C-2. Patient Need for Elimination 54
17 Nutrition and Elimination: C-2. Patient Need for Elimination (Subtasks) 55
18 Nutrition and Elimination: C-3. Patient Need for Oxygen Transport and Exchange 56
19 Nutrition and Elimination: C-3. Patient Need for Oxygen Transport and Exchange (Subtasks) 58
20 Treatments, Procedures, Medications, and Diagnostic Activities: D-1. Treatments and Procedures 60
21 Treatments, Procedures, Medications, and Diagnostic Activities: D-1. Treatments and Procedures (Subtasks) 62
22 Treatments, Procedures, Medications, and Diagnostic Activities: D-2. Application of Heat, Cold, Medicated Therapeutic Agents 66
23 Treatments, Procedures, Medications, and Diagnostic Activities: D-2. Application of Heat, Cold, Medicated Therapeutic Agents (Subtasks) . . . 67
24 Treatments, Procedures, Medications, and Diagnostic Activities: D-3. Medications 70
25 Treatments, Procedures, Medications, and Diagnostic Activities: D-3. Medications (Subtasks) 71

LIST OF TABLES (Cont)

Table		Page
26	Treatments, Procedures, Medications, and Diagnostic Activities: D-4. Diagnostic Activities	72
27	Treatments, Procedures, Medications, and Diagnostic Activities: D-4. Diagnostic Activities (Subtasks)	74
28	Observation and Communication: E-1. Observation, Analysis, Interpretation	77
29	Observation and Communication: E-1. Observation, Analysis, Interpretation (Subtasks)	79
30	Observation and Communication: E-2. Oral and Written Communication	82
31	Observation and Communication: E-2. Oral and Written Communication (Subtasks)	87
32	Administration, Coordination, Housekeeping: F-1. Administration and Coordination	92
33	Administration, Coordination, Housekeeping: F-1. Administration and Coordination (Subtasks)	96
34	Administration, Coordination, Housekeeping: F-2. Housekeeping Functions	99
35	Administration, Coordination, Housekeeping: F-2. Housekeeping Functions (Subtasks)	101
36	Range of Frequency of Performance and Range of Criticality Scores, Rank-Ordered by Nursing Area	102
37	Frequency of Midmost Task and Median Criticality Score, Rank-Ordered by Nursing Area	103

CHAPTER I. INTRODUCTION

A. BACKGROUND

A major problem confronting society in the United States is the increasing demand for health-care services. Among the factors causing this increase are population growth, the rising proportion of older people in the population, increasing incomes, better education, increasing urbanization of the population, more coverage by private and public health insurance plans, better medical care made possible through advances in medical technology, and general acceptance of the idea that good quality health care is a basic human right. The magnitude of the increase in demand for health care is indicated by the increase in expenditures for these services, which rose from approximately 50 billion dollars in 1950 to approximately 74 billion dollars in 1970.

The effect of this increase in utilization of health-care services has caused a severe shortage of workers to man the health-care delivery system. Highly trained professionals such as physicians and dentists, while primarily responsible for providing health care, cannot keep abreast of the increase in demand for their services. The only practical solution to the problem is to increase the number of allied health workers who can relieve the physician and dentist of those parts of their responsibilities that such workers can be trained to perform and which can be legally delegated to them. This fact is documented in House Report 1628, 89th Congress, Second Session.

> As health care becomes more complex, and as demands for health care increase, all of the functions of care cannot be performed by doctors and dentists themselves. The supply of doctors, dentists, and other highly trained professionals simply cannot be expanded sufficiently to meet these needs. A large number of allied professional and technical workers will be required to extend the reach of physicians and dentists. Looking ahead ten years, we can see that the supply of physicians will be about the same as it is today in relation to population. Our hopes and needs to provide the best quality health care for the American people can be fulfilled only to the extent that it is possible to increase the numbers and capabilities of allied health workers.

To extend the reach of the professionals, efforts must be made to increase the supply of trained manpower in the allied health occupations and to promote more effective utilization of present manpower. There is a need for training of personnel not only in traditional supportive occupations and functions but also in new and emerging ones. Advances in technology are creating new occupations as well as needs for new skills in established occupations

MANPOWER NEEDS

Even though recent growth in the allied health occupations has been rapid, it has consistently lagged behind current demands. Projections of future needs show the magnitude of the effort that will be required to overcome the manpower shortages that already exist in many sections of the health-care field. The National Advisory Commission on Health Manpower in 1967 estimated that the total number of workers required in the health-care system would increase from 3.9 million in 1968 to 6.35 million in 1980. By far the greatest share of this increase will represent subprofessional workers in the various allied health occupations. Typical of the current status and projected needs in these occupations are the following statistics:

CURRENT STATUS AND PROJECTED NEEDS IN THE ALLIED HEALTH PROFESSIONS*

OCCUPATION	ESTIMATED EMPLOYMENT 1968	PROJECTED REQUIREMENTS 1980	PERCENTAGE CHANGE 1968-80
Dental Hygienist	16,000	33,500	109.4
Dietitian	30,000	42,100	40.3
Medical Laboratory Workers	100,000	190,000	90.0
Nursing			
RN	660,000	1,000,000	51.5
LVN/LPN	320,000	600,000	87.5
Hospital Attendant (Aide, Orderly)	800,000	1,500,000	87.5
Occupational Therapy	7,000	19,000	171.4
Physical Therapy	14,000	36,000	157.1
Radiologic Technologist	75,000	120,000	60.0

---

*Occupational Outlook Quarterly, Winter, 1970.

The U.S. Department of Labor *Dictionary of Occupational Titles* lists 238 occupations in the health-care field. Some require baccalaureate level or higher education, but training for many of them can be given at lower levels. Existing programs for training allied health workers range from short-term inservice training to courses extending beyond the baccalaureate degree. A large proportion of health occupation education now consists of one- and two-year post-secondary programs in community and junior colleges, and also in vocational and technical schools. In a study made by the UCLA Survey Research Center for the California Regional Medical Programs, it was found that nearly 40 occupational training programs in the allied health field are being offered at junior colleges in California. These fall into six broad areas:

1. Laboratory and X-ray occupations, including clinical laboratory, radiation therapy, and electrocardiographic aides and technicians.

2. Nursing occupations, from aides through the registered nurse.

3. Therapy and rehabilitation occupations, including physical therapy assistant, occupational therapy assistant, prosthetic technician, orthotic technician, inhalation therapy technician, rehabilitation assistant.

4. Specialized occupations, ranging from optometric assistant to dietician aide to medical photographer.

5. Dental assistant and hygienist occupations.

6. Administrative and clerical occupations such as medical records technician and medical office assistant.

NEED FOR TRAINING MATERIALS

It is clear that efforts are being made to extend facilities for training of allied health personnel, but manpower needs in the allied health occupations will not be met merely by a proliferation of training programs. The quality of training is a vital concern. If teaching institutions are to do the job required of them, they need curricula and instructional materials that have been developed with reference to real job functions and are effective in preparing students to meet explicit standards of performance in these functions. Programs too often are developed on the basis of obsolete job descriptions or on the basis of what someone thinks workers in the field do or ought to do, instead of what they actually do. Many allied health occupations are undergoing changes that should be reflected in new curricula; others have come into being so recently that very little planned instruction is available for them. Curriculum materials founded on objective job analyses, therefore, are needed for the construction of realistic and relevant educational programs that will contribute to the relief of manpower shortages.

Instructional materials need to be developed with consideration of the career sequence and core concepts in order to provide the kind of training that will facilitate vertical and horizontal mobility. One of the reasons for difficulties in the recruitment and retention of health care workers is the dead-end nature of many jobs in the field. An effective training program must do more than fit an individual into a niche where his potentialities may never be realized. It should also furnish the entry-level worker with a proper foundation for continuing education, and should be designed to provide a progression of educational experiences through which the worker can advance to successive levels without the necessity of repeating materials already learned.

GENERAL SCOPE AND PURPOSE

The Allied Health Professions Project was established in 1968 in response to the need for research and development programs to stimulate recruitment and training of manpower for the allied health occupations. The purpose of the project was to create modern preservice and inservice curricula and instructional materials for selected allied health occupations at levels ranging from on-the-job training to the junior college associate degree. The scope of the project extended through all phases of curriculum development, from occupational and task analyses and design of appropriate curricula to delivery of tested instructional materials for use in hospitals, junior colleges, high schools, extension and adult education programs, as well as other settings.

Shortly after the start of the Project, it was augmented by the creation of a secondary school level allied health occupational orientation and training program; one of the major objectives of this program was to attract and hold potential dropouts in disadvantaged areas. It was identified as the Secondary Schools Allied Health Occupations Pilot and Demonstration Project, and was initiated through an augmentation of the Allied Health Professions Project grant with U.S. Office of Education funds. These funds were provided for FY 1969 and 1970; thereafter, the program was supported through Vocational Education funds obtained from the California State Department of Education. Inasmuch as the Allied Health Professions Project and the Secondary Schools Allied Health Occupations Pilot and Demonstration Project had quite different objectives, they soon began to operate separately, and for this reason a separate report has been prepared for each program.

SPECIFIC OBJECTIVES

The specific objectives of the Allied Health Professions Project were:

1. To identify by job or task analysis the curricula for a group of selected allied health occupations, and to determine performance standards for required skills and knowledges for each, the occupations to be selected on the basis of national and local need.
2. To develop innovative continuing education programs for each occupation, with maximum vertical and horizontal articulation, utilizing autotutorial, polysensory multimedia, and other types of teaching materials as appropriate.
3. To train teachers in the use of the new programs and materials by means of seminars and teacher training workshops.
4. To test the instructional materials in junior colleges and health-care facilities in order to evaluate their effectiveness in training students to achieve specific performance objectives.
5. To develop and evaluate preservice education programs based on the curricula and materials prepared for use in the continuing education programs, and to train preservice teachers.
6. To make the curricula and instructional materials available on a nationwide scale, and to establish a procedure for maintaining them current with changes and new research findings in the allied health occupations, with provisions for rapid incorporation of new content into the educational programs for the several occupations.

B. GENERAL METHODOLOGY

GENERAL ORGANIZATION

The Allied Health Professions Project was conducted under the general supervision of an Executive Research and Design Group which determined policy for the research program. A National Advisory Committee was recruited and organized to establish policy and provide guidance in handling interagency relations. Members of the committee included representatives of educational institutions, professional associations in the health field, government agencies, and the general public. Advice and assistance on all phases of curriculum development within specific occupational areas were furnished by National Technical Advisory Committees of expert practitioners, educators, and other knowledgeable individuals concerned.

Support and cooperation in implementing the project's research and development program were received from the League for Innovation in the Community Colleges and the Southern California Association of Junior Colleges, as well as from many individual schools and hospitals throughout the country. The advisory committee and cooperating institutions are listed in Appendix A.

The initial plans of the project were to develop instructional materials for 18 occupational areas that usually require training at the junior college level or below. The selection of occupations was reviewed and discussed by the National Advisory Committee. Present and projected manpower needs and the availability of instructional materials for the various occupations were considered. On the recommendation of the committee, five additional occupational areas were selected. Later, work was undertaken at the request of the Area IV, California Regional Medical Program, UCLA, to develop a curriculum for the Gastroenterology Assistant and, in addition, two graduate students conducted a preliminary research of the functions of the Physician's Assistant as a special summer project.

The final list of areas in which curriculum development was initiated by the project follows:

1. Hospital Admitting Office
2. Bioelectric Monitoring (ECG, EEG, EMG)
3. Biomedical Photography
4. Hospital Business Office
5. Central Service
6. Clinical Laboratory
7. Dental Auxiliary Occupations
8. Hospital Engineering Maintenance
9. Hospital Environmental Sanitation
10. Hospital Food Service
11. Gastroenterology Assistant
12. Hospital Housekeeping
13. Hospital Laundry and Linen
14. Medical Office Assistant
15. Medical Record Technology
16. Nursing
17. Hospital Pharmacy
18. Hospital Purchasing
19. Radiologic Technology
20. Respiratory Care/Inhalation Therapy
21. Medical Social Service
22. Occupational Therapy
23. Physical Therapy
24. Prosthetics
25. Orthotics
26. Ward Administration (Nursing Unit Administration)

A research and development procedure was developed by the project staff to serve as a general guide in working on the occupations selected. The procedure was designed to be flexible so that it could accommodate readily to the differences certain to be encountered in dealing with such diverse occupations. The ten-step procedure is as follows:

1. Identify, list, and classify all possible tasks within the functional area described. (The result is the Task Inventory.)

2. Verify the tasks through a survey or field test to determine the appropriateness of the task list to the occupational category being studied. (The result is the Occupational Analysis.)

3. Determine the processes involved in the performance of the tasks and determine the knowledges and skills required for satisfactory accomplishment of each task. (The result is a Job Operation Breakdown for each task.)

4. Develop behavioral objectives or performance goals, based on the performance and knowledge identified in the Job Operation Breakdowns.

5. Develop a curriculum, based on specific employment goals of a specific occupational category, such as nurses' aide, licensed vocational nurse, or registered nurse.

6. Develop innovative instructional materials and instructor manuals in modular form to implement the courses in the curriculum.

7. Test instructional materials in the instructional setting, preceded by inservice teacher education in their use where practical.

8. Evaluate student performance by measuring their attainment of behavioral objectives.

9. Produce or get others to produce the instructional materials.

10. Distribute or get others to distribute the instructional materials.

OCCUPATIONAL ANALYSIS

The purpose of occupational analysis in this context is to form a basis for developing curricula and instructional materials that are realistic in terms of the jobs for which training should be provided. Therefore, a task inventory for each occupational area was developed as a listing of all tasks that may be performed by workers in a broadly defined functional area, without prejudgment of the specific occupational levels to which the tasks may be appropriate. The functional area approach is important, inasmuch as utilization of personnel varies in different areas of the country and in different occupational settings.

The specific aims of each occupational analysis are:

1. To determine what tasks are performed with what frequency and with what criticality and amount of supervision by each category of persons within each functional area.

2. To define areas of overlapping tasks within a functional area and to attempt to reduce or accommodate areas of overlap.

3. To determine a hierarchy of tasks in terms of levels of difficulty, criticality, error cost, and kinds of knowledges and skills required, so that tasks may be assigned to appropriate levels of personnel.

TASK INVENTORIES

Sources of items for the task inventories included consultations with experts, site visits to observe current practices in health-care facilities, and reviews of the literature, including job descriptions and procedure manuals. Tasks were stated in behavioral terms to facilitate their transfer into curricula. Each task inventory was submitted to a National Technical Advisory Committee for review and revision before publication.

NATIONAL SURVEYS

The task inventories were validated by national surveys in which data on frequency of performance, difficulty of performance, criticality of performance, and supervision (either received or exercised) in performance of each listed task were collected from workers employed in the areas covered by the inventories. Questionnaires used in the surveys were designed for self-administration, and were pretested locally on a small scale with samples of respondents representative of the populations to be surveyed. Advice on the design of the questionnaires and assistance in processing the survey data were provided by the UCLA Survey Research Center. The completed study constituted the occupational analysis.

SURVEY SITES

Survey sites were selected to provide a representation of the patterns of health-care delivery and personnel utilization existing throughout the country. A total of 48 health-care facilities were selected, eight from each of six metropolitan areas: Boston, Birmingham, Chicago, Denver, Seattle, and Los Angeles. Two large hospitals (200 or more beds), two medium-sized hospitals (100 to 199 beds), two small hospitals (fewer than 100 beds), and two extended-care facilities within a 200-mile radius of each city were selected randomly from among facilities accredited by the Joint Commission on Accreditation and approved by Medicare. Local hospital associations then were contacted and their recommendations were followed in making substitutions for any of the initially chosen facilities that were considered unlikely to be cooperative. Other substitutions were made later for facilities that withdrew their participation, but most of them remained in the sample for the duration of the project. The sample consisted mainly of voluntary nonprofit institutions, although some proprietary and government-sponsored ones were included. The extended-care facilities included both attached and unattached units.

DESIGNATION OF RESPONDENTS

Questionnaires for most of the surveys were distributed and returned by mail. Initially, a resident survey administrator was designated for each metropolitan area, but in later surveys, arrangements were made for a staff member of each facility to receive and distribute the questionnaires to the employees selected as respondents. The number of respondents in each survey depended on the number of employees to be surveyed in the area. An effort was usually made to obtain responses for all personnel in departments having few employees. In larger departments, selection of specific respondents from among employees within designated categories or levels was left to the discretion of the staff member who distributed the questionnaires. For surveys of areas not adequately represented in hospital settings, supplementary or alternative samples were obtained by such means as random selections from offices, laboratories, or other appropriate facilities listed in national directories.

OTHER DATA

It was thought that frequency of performance, difficulty, and supervision could be meaningfully assessed by employees themselves. For other kinds of information that may be important in determining how tasks should be taught in a curriculum, however, the opinions of experts were thought to be a more appropriate source. In most of the occupational areas surveyed, therefore, additional dimensions of task performance were assessed by members of the National Technical Advisory Committees, who were asked to give their expert judgments concerning certain of the following task dimensions:

1. Human interaction: the level of human interaction skills by which the performer deals with recipients of the service rendered or the response of the latter to the service of the performer.

2. Criticality: the level of tolerance that can be allowed in performance without significant loss of time, materials, equipment, or hazard to patient or worker comfort or safety.

3. Psychomotor coordination: the difficulty of performance in terms of the level of manual skill required.

4. Cognitive level: the depth of knowledge, in terms of the number of procedures and quality of decision-making required for performance.

5. Appropriateness: suitability of the task to the area under consideration, and to occupational levels within the area.

The procedures used for collection and analysis of task data in each of the selected occupational areas are described in the published occupational analysis reports. Percentages of personnel within different categories who performed each task were analyzed to identify core tasks for an area as well as additional clusters of tasks that would be appropriate for occupational specialties within the area. Evaluations of other dimensions of task performance were made relative to their probable influence on the placement of tasks in curricula and the kinds of learning experiences to be provided. Each occupational analysis was a source of data for the design of a curriculum or curricula based on actual job performance requirements, with provisions for vertical and horizontal mobility.

C. DEVELOPMENT OF CURRICULA

Development of instructional materials for each occupational area was based on the curricula established by occupational analysis. The content of the materials was organized into modules capable of selective combination to form curricula for use in various settings. The modular form permits flexibility and application of the career ladder concept to the construction of curricula. Design of the modules was oriented toward individualized instruction that permits a student to proceed at his own pace through a programmed series of learning experiences.

The objectives of each module were stated in terms of the observable behaviors desired as the outcome of instruction. The objectives specified the conditions under which the behavior was to occur and the criteria for identification of successful performance. The module then was designed to provide the learning experiences necessary for achievement of the behavioral objectives. Development of the module was based on a job operational breakdown that divides each task or activity into a step-by-step procedure or sequence of operations, and identifies key points of knowledge essential to correct performance of these steps.

Planning of each module involved consideration of the prerequisites and standards for student performance, the appropriate presentation media, and the nature of the learning environment. The target population was defined, and prerequisite tests were developed if necessary. Each behavioral objective was translated into a checklist of items representing observable segments of behavior whose performance, according to stated criteria, would be necessary for the attainment of the objective. Selection of media was based on the nature of the material to be taught, the kinds of responses to be elicited from students, and the estimated relative cost-benefits of different available media. The learning environment was defined with respect to the kind of supervision required during learning, and the materials, equipment, and space requirements for effective use of the module.

Subject-matter experts were employed as writers and consultants to assist members of the project staff in production of the instructional modules. Job operational breakdowns and drafts of instructional material were reviewed for accuracy and completeness by members of the National Technical Advisory Committees and other technical experts. Prototype modules, after revision and preliminary testing, were submitted to the appropriate National Technical Advisory Committees for approval of their objectives and content before production of final drafts.

The standard format for each module included the following elements, except in some instances where the nature of the material made certain elements unnecessary:

1. Directions to the student for use of the materials.
2. An introduction to reinforce the student's motivation for learning and to explain the significance of the material in relation to the overall health-care system.
3. A vocabulary to provide the student with a convenient reference for definitions of technical terms used in the module.
4. A bibliography of sources for the module and materials that can be used for further study, particularly in the areas of basic sciences and technology.

5. Enrichment material largely from the basic sciences and technology, to provide additional knowledge that would broaden the student's understanding and facilitate application of the skills he has learned, particularly in the area of problem-solving.

Directions and suggestions to teachers for use of the instructional modules were provided in teachers' guides prepared for distribution with completed instructional materials packages. The teachers' guides included:

1. A definition of the target group or population for whom the materials are intended.
2. The prerequisites for learning the materials.
3. The performance objectives that the student is expected to achieve.
4. Written tests for evaluation of learning progress, and performance tests and checklists for measuring attainment of the performance objectives.
5. A list of equipment and materials needed to provide an appropriate learning environment.
6. A list of audiovisual aids or other teaching aids and supplementary materials that may be used to enhance the learning process.

Initial testing of each module was conducted individually with subjects representative of the target population. Each learner was observed to determine how well he was able to progress through the material unaided, and whether or not he was able to pass the performance test on completion of the module. The learner's reactions to the materials were elicited to identify and correct deficiencies that might cause learning difficulties. After individual testing, the module was given to student groups in cooperating institutions by instructors who had been oriented in use of the materials. Evaluation of the module's effectiveness was made in terms of the percentage of students passing the performance test. Group testing of a module was replicated at least once.

OVERALL RESULTS

The results of the project's activities have been published in a series of task inventories, occupational analysis reports, career model curricula, and instructional materials. They had been widely distributed to individuals and institutions in all of the fifty states of the United States and to a number of foreign countries as well. Many of the instructional modules have been adopted by educational institutions for use in their classes. These include hospitals as well as colleges. Reports of the project's activities have been made at various national and regional conferences of organizations concerned with allied health manpower and training. Pilot programs, utilizing instructional packages developed by the project, are under way in hospitals, high schools, and community colleges, and workshops have been conducted in various areas of the country to give teachers orientation and training in use of these new materials.

TASK INVENTORIES

Twenty-five task inventories have been published in a volume entitled *Allied Health Professions Task Inventories,* which lists 4,954 tasks. Each inventory is based on research, field observation, and the advice of experts and practitioners from the occupational area under consideration as described earlier. The occupations for which task inventories have been prepared, and the number of tasks in each, are listed in table 1.

TABLE 1

ALLIED HEALTH OCCUPATIONS FOR WHICH TASK INVENTORIES HAVE BEEN PREPARED

OCCUPATIONS (25)	NUMBER OF TASKS
Biomedical Photography	232
Central Service	177
Clinical Laboratory	498
Community Health Nursing	234
Dental Assistant	219
Dental Laboratory Technician	118
Dental Hygienist	172
Electroencephalography Technician	86
Hospital Maintenance Engineering	234
Hospital Food Service	240
Hospital Admitting Office	128
Hospital Business Office	343
Hospital Housekeeping	146
Hospital Laundry & Linen Service	162
Medical Office Assistant	230
Medical Record Technician	252
Nursing	306
Hospital Pharmacy	84
Hospital Purchasing	53
Radiology Technician	192
Respiratory Care/Inhalation Therapy	125
Health-Care Facility Sanitation	243
Public Health Sanitation	159
Medical Social Service	145
Ward Management	176
Total	4,954

Task inventories have proved to be useful as source materials in the development of courses of study for inservice training programs designed for inducting new employees or for upgrading present ones. The training director can use a task inventory somewhat like a dictionary, going down the lists of tasks and selecting those that are appropriate for the objectives he wishes to attain with any particular group of employees.

In preparing job descriptions, task inventories are useful as a means of checking against the omission of any essential task that should be included in any particular job.

To most practitioners in an allied health occupation, a complete task inventory of the occupation is an impressive document. Generally very few of them realize the scope and content embraced in the work they do every day. Review of the content of the task inventory is often a shock to the experienced worker who does not appreciate the skills and knowledge he possesses until he sees it all laid out and classified into units of related tasks, many of which are in some instances of sufficient magnitude to constitute suboccupations in themselves.

CHAPTER II. METHODS AND PROCEDURES

A. OCCUPATIONAL ANALYSES

An occupational analysis is a report of a study of an occupation which is undertaken for the purpose of determining the kinds and characteristics of the work done in the occupation. The tasks believed to be performed are identified through the task inventory, which is made as all-inclusive as possible. The occupational analysis study is undertaken to validate the task inventory by gathering information through observation, interviews, judgments of experts, and a variety of other survey techniques. The information is analyzed to develop guidelines for curriculum construction and preparation of instructional materials.

Factors taken into consideration in making an occupational analysis will vary with different occupations. Some that have been found useful are:

1. Performance or nonperformance of the task.
2. Frequency of performance of the task.
3. Amount of supervision required while performing the task.
4. Time required to perform the task.
5. Complexity of the task.
6. Amount of training and knowledge required to perform the task.
7. Relative difficulty of the task.
8. Experience required to perform the task.
9. Criticality of the task.
10. Importance of the task in the occupation.

Occupational analyses have been an important part of vocational education curriculum development for many years. Traditionally, it is believed that the work of Charles A. Allen, in his book entitled *The Instructor, the Man, and the Job*, published in 1919, was the foundation for occupational analysis carried on in state vocational teacher training programs for many years under the Smith-Hughes Act. Allen's basic ideas do not differ in any significant degree from the more recent studies in the field.

Some very useful work has been done by the U.S. Air Force, particularly that by Dr. Raymond E. Christal, who cooperated with the UCLA Allied Health Professions Project during the formative stages of the program when decisions were being made regarding research instrument design.

The U.S. Labor Department has also made some notable contributions in the area of occupational analysis, particularly the work of Mr. Leon Lewis.

The Health Services Mobility Study, conducted by the Research Foundation of City University of New York, has been carried on over a period of years and has produced some interesting and useful data. Their report, *Suggestions for Job and Curriculum Ladders in Health Center Ambulatory Care: a Pilot Test of the Health Services Mobility Study Methodology*, provides a full description of a method of occupational analysis based on a computerized form of factor analysis.

In developing its methodology for making occupational analyses, the Allied Health Professions Project borrowed freely from every source available, and improvised when no precedents were available for guidance. After the method was developed, preparation of the fifteen analyses was completed for necessary adaptations to meet the circumstances peculiar to certain occupations. For example, the group of health-care facilities consisting of hospitals of various sizes and a number of extended-care facilities located in six cities served very well as the sources of respondents in making the nursing studies, but were of no value in the dental hygienist study which required an entirely different approach. However, the nursing studies do represent the general methodology applied to all the other occupations analyzed, and more progress has been made in completing the entire developmental program in nursing, including instructional materials, than in any of the other occupations. For these reasons, nursing will be used as an example of the procedures utilized, followed in the chapter on "Results" by a discussion of the analyses of the other occupations with emphasis on the variations in methods and results. The following pages are an adaptation of *A Study of Nursing Occupations*, the analysis of the nursing occupations which was started in 1968 and published in April 1970. The information provided by the analysis was used as the basis for development of a total nursing curriculum, *Career Model for Nurse Practitioners*, published in March 1972. To implement the curriculum, the development of instructional materials was undertaken, and the first two instructional manuals based on the career model were started in 1971, before the latter was published. The first two instructional manuals, titled *Nursing Skills for the Allied Health Occupations, Volumes I and II*, were accepted by the W.B. Saunders Company of Philadelphia, and published in May 1972. The third and final volume will be published by the same firm in 1973, thus completing the basic cycle of educational program development – task inventory, occupational analysis, curriculum, and instructional materials. Following the discussion of the occupational analysis (which includes the task inventory), the procedures for developing the curriculum and instructional materials will be explained.

B. PROCEDURES USED IN DEVELOPING OCCUPATIONAL ANALYSES

TASK IDENTIFICATION

Tasks were identified by the Associate Project Director through observation of the activities of relevant personnel, review of literature, her own occupational experience, and discussion with nursing personnel and educators. Tasks performed by all levels of nursing personnel were included. Certain functions were broken down into subtasks. For example, "Open sterile packages and packs," "Pour sterile solutions," etc., were specified as subtasks of the more comprehensive task, "Carrying out aseptic techniques."

Following identification, the tasks were grouped into functional areas. It must be acknowledged that within each of these areas there were tasks identified which were not nursing functions; they were included because they were performed by nursing personnel. The functional areas, with examples of the kinds of tasks comprising them, are:

A. Diversional Therapeutic and Assistance Activities: "Assist with individual and group therapy."

B. Safety and Comfort: Personal Hygiene and General Comfort: "Give or assist patient with oral hygiene."

C. Nutrition and Elimination: "Assist patient to eat," i.e., prepare food so that patient may assist himself.

D. Treatments, Procedures, Medications, and Diagnostic Activities: Treatments and Procedures: "Insert urinary catheters."

E. Observation and Communication: Observation, Analysis, Interpretation: "Observe patient's general appearance."

F. Administration, Coordination, Housekeeping: Administration and Coordination: Direct personnel and activities of nursing team: "Assign patients to team members."

These six functional areas relate directly to the six occupational activity categories established for the Task Analysis. For purposes of detailed analysis, the six major functional areas have been further subdivided into a total of 16 nursing areas, under the rubrics established by the six functional areas. For convenience in referring to the survey instrument, all three types of grouping have been related, as follows:

Functional Area A – Survey Category I, "Diversional Therapeutic and Assistance Activities"

1. Receive and Deliver Messages and/or Mail to Patients

Functional Area B – Survey Category II, "Personal Hygiene and General Comfort"

1. Patient Protection
2. Personal Hygiene and General Comfort
3. Religious and Spiritual Care
4. Patient Need for Movement

Functional Area C – Survey Category III, "Nutrition and Elimination"

1. Patient Need for Food and Fluids
2. Patient Need for Elimination
3. Patient Need for Oxygen Transport and Exchange

Functional Area D – Survey Category IV, "Treatments, Procedures, Medications and Diagnostic Activities"

1. Treatments and Procedures
2. Application of Heat, Cold etc.
3. Medication
4. Diagnostic Activities

Functional Area E – Survey Category V, "Observation and Communication"

1. Observation, Analysis, Interpretation
2. Oral and Written Communication

Functional Area F – Survey Category VI, "Administration, Coordination, Housekeeping"

1. Administration and Coordination
2. Housekeeping Functions

In all, 317 tasks and subtasks were specified.

AIMS AND LIMITATIONS OF THE SURVEY INSTRUMENT

It was believed that a survey using a behaviorally specified task inventory would be of definite value in determining the specific skills to be covered in the development of preservice and inservice curricula. The survey is specifically directed to the following questions:

1. the frequency with which the task is performed;
2. the degree of supervision associated with the performance of a particular task;
3. the level of (perceived) difficulty of the task.

It was assumed that the employee could most accurately identify the frequency with which he performed a task and the amount of supervision he received. The assessment by personnel of the difficulty of tasks in terms of the numbers of procedures and kinds of decisions involved in them was thought to be a source of useful information for determining the problems involved in learning how to perform them competently. A sample page of the survey instrument along with covering informational material appears on page 113. Survey questions are given in toto in the tables which accompany the text.

The results of the task survey by themselves do not provide the range of information required for adequate task analysis. The development of effective and relevant curricula demands a careful and critical assessment of a number of dimensions relevant to task performance, not all of them obtainable through questions directed to personnel. For example, the dimension of "difficulty" has both a subjective and an objective component, the former being tapped by the responses of personnel to the task survey discussed briefly above. To get at the objective component requires expert analysis and evaluation of the task and its component procedures.

OTHER DATA

In addition to the responses of personnel to the task survey, members of the Technical Advisory Committee were asked to make expert judgments concerning dimensions of task performance deemed relevant to the building of innovative training programs. These dimensions are as follows:

1. Human Interaction. This scale is intended to assess the level of human interaction skills by which the performer deals with the recipients of the service rendered or the response of the latter to the service of the performer.

2. Criticality. This scale is intended to assess the level of tolerance which can be allowed in the performance of each task without a significant loss of time, materials, equipment, patient comfort or safety.

3. Psychomotor Coordination. This scale is intended to evaluate the difficulty of each task in terms of the level of manual skill required to perform the task well.

4. Cognitive Level. This scale is designed to evaluate the depth of knowledge (in terms of the number of procedures and quality of decision making) required to perform a task well.

5. Appropriateness. Not a scale, but a qualitative judgment concerning the appropriateness of a particular task as a nursing function and, within nursing, the level of competence required to perform it.

A description of these scales and the procedure for their application by the Technical Advisory Committee will be found on page 117.

In addition to the information supplied by the Advisory Committee, background data are available on individual respondents and the structural characteristics of the institutions that employ them. In terms of background, respondents were asked to indicate such facts as age, sex, education, experience, and income. The pertinent structural characteristics of the hospitals from which respondents were drawn are region (i.e., Los Angeles, Chicago, Seattle, Denver, Birmingham and Boston), size (i.e., number of beds), and type (i.e., acute voluntary, proprietary, and nursing home, attached, unattached). In addition, the medical area (i.e., medical-surgical, obstetrics, pediatrics and psychiatry) is also indicated. (See pages 114 and 115.)

Such information is potentially useful in defining variations in needs for training (e.g., different requirements arising from type of facility, regional variations, different levels of experience, etc.). It should be noted, however, that the basic task is to establish general guidelines for the development of curricula based on the needs of nursing occupations nationwide. Background and structural variables such as those mentioned above will play their part in subsequent refinements of the nationwide task analysis directed to arriving at such general guidelines.

SELECTION OF RESPONDENTS

Since the curricula and instructional materials developed were to have national applicability, respondents to the task analysis survey were selected in a way which would reflect a generalized pattern of medical and nursing care for the country as a whole. A panel of 48 hospitals was developed from which respondents were to be selected for all or most of the task analyses to be performed in the Allied Health Professions Projects (AHPP).

SELECTION OF HOSPITALS – To facilitate the collection of data for all surveys, hospitals were selected which lay within a 200-mile radius of six metropolitan areas – Chicago, Birmingham, Boston, Seattle, Denver, and Los Angeles. Within each selected area, six hospitals (two small, less than 100 beds; two medium, 100-199 beds; and two large, 200 beds and over) and two extended-care facilities were selected randomly from the lists of facilities approved by Medicare.* The local hospital associations were then contacted and any hospital randomly selected which was known to be noncooperative was replaced upon the advice of that hospital association. The hospitals making up the final group were, therefore, a selected group or judgment sample. (For list of cooperating hospitals, see page 110.)

The hospitals included consisted mainly of voluntary nonprofit facilities, although proprietary and government-sponsored facilities were included. Extended-care facilities included both attached and unattached units – so designed to include multiple patterns of staffing and management.

DESIGNATION OF RESPONDENTS – Each hospital was requested to provide a specified number of respondents which varied with the occupational group under study. In the nursing survey, large hospitals were asked for 15 respondents, medium hospitals for 12 respondents, and small hospitals and extended-care facilities for 9 respondents. Where possible, these were divided equally into the three categories of nursing area personnel involved; e.g., a large hospital would be asked for 15 respondents, of whom five would be RNs, five LVN/LPNs, and five Nurses' Aides. In addition, hospitals were asked to obtain respondents from varying areas of patient care – Medical-Surgical, Obstetrics, Pediatrics and Psychiatry. (See page 112 for distribution of respondents requested.)

The surveys were distributed by personnel on the Project's staff in conjunction with the hospital administration. Completed survey forms were returned to the Project's staff member (not administration) and forwarded to UCLA for preparation for data processing. In some instances, respondents were given a return envelope and asked to return the survey form directly to UCLA.

**Directory of Medicare Providers of Services, Hospitals, Title XVIII: Health Insurance for the Aged.* U.S. Department of Health, Education and Welfare, Social Security Administration, October 1968; *Directory of Medicare Providers of Services, Extended Care Facilities, Title XVIII: Health Insurance for the Aged.* U.S. Department of Health, Education and Welfare, Social Security Administration, October 1968.

A total of 450 questionnaires was distributed to nursing personnel.* Usable responses were received in time for processing from 398 respondents, a response rate of 88 percent (see table 2). Several additional questionnaires received after the final cutoff date were not included in this analysis of the data.

TABLE 2

NUMBER OF QUESTIONNAIRES DISTRIBUTED AND NUMBER AND PERCENT RESPONSES RECEIVED, BY GEOGRAPHIC AREA

Number of Questionnaires	Geographic Area						
	Birmingham	Boston	Chicago	Denver	Los Angeles	Seattle	Total
Distributed	72	59	80	80	71	88	450
Returned	60	47	65	80	63	83	398
Percent returned	83	80	81	100	93	93	88

An analysis was made of the respondents by category of nursing personnel and geographic area. It was demonstrated that although some geographic areas had fewer respondents than others, equal proportions of nursing personnel categories (RN, LVN/LPN and Aide) were obtained within each geographic area and for the group as a whole (see table 3).

CHARACTERISTICS OF RESPONDENTS

As might be expected, the respondents reflected the characteristics of the hospitals and extended-care facilities selected and the patient care area coverage requested (table 4). The largest proportion (78.1 percent) of respondents in all categories was employed in voluntary or community acute general hospitals. Proprietary acute general hospitals were represented by a small percentage of the respondents (6.3 percent) and the remainder (15.6 percent) were employed in extended-care facilities.

The distribution of respondents by hospital size and by area of patient care also proved to be as expected. Somewhat less than 50 percent of respondents was employed in larger hospitals — a percentage not unlike the distribution of hospital sizes in the country as a whole. The largest proportion of respondents in all categories was employed in the medical-surgical service of the hospitals.

---

*According to the survey plan, a total of 540 questionnaires was to have been distributed (90 per geographic area). In every area, however, there were some hospitals that had insufficient nursing personnel available to meet the survey "quota," and a smaller number of questionnaires was distributed.

Table 3. RESPONSE BY CATEGORY OF NURSING PERSONNEL AND GEOGRAPHIC AREA

	Geographic Area													
	Birmingham		Boston		Chicago		Denver		Los Angeles		Seattle		Total	
Nursing Personnel	N=60	100%	N=47	100%	N=65	100%	N=80	100%	N=63	100%	N=83	100%	N=398	100%
Registered Nurse	22	36.6	15	31.9	23	35.4	28	35.0	21	33.3	28	33.7	137	34.4
Licensed Vocational Nurse	19	31.6	16	34.0	20	30.8	26	32.5	22	34.9	27	32.5	130	32.7
Nurses' Aide	19	31.6	16	34.0	22	33.8	26	32.5	20	31.8	28	33.7	131	32.9

Table 4.

DESCRIPTION OF RESPONDENTS BY POSITION TITLE BY TYPE AND SIZE OF HOSPI[illegible] AND AREA OF PATIENT CARE

	Position Title							
	RN		LVN/LPN		Aide		Total	
Item	N=137	100%	N=130	100%	N=131	100%	N=398	100%
				Hospital Type				
Acute Voluntary and/or Community	110	80.3	104	80.3	97	74.0	311	78.1
Acute Proprietary	8	5.8	8	6.2	9	6.9	25	6.3
Extended Care Facility	19	13.9	18	13.5	25	19.1	62	15.6
				Hospital Size				
Less than 100 beds	52	38.0	51	39.2	48	36.6	111	27.9
100 - 199 Beds	37	27.0	33	25.4	33	25.2	103	25.9
200 Beds and Over	29	21.2	28	21.5	25	19.1	82	20.6
Extended Care Facility	19	13.9	18	13.8	25	19.1	62	15.6
				Area of Patient Care				
Medical-Surgical	104	75.9	94	72.3	94	71.8	292	73.4
Obstetrics	17	12.4	20	15.4	11	8.4	48	12.1
Pediatrics	10	7.3	9	6.9	8	6.1	27	6.8
Psychiatric	2	1.5	1	0.8	3	2.3	6	1.5
No Answer	4	2.9	6	4.6	15	11.5	25	6.2

Very few respondents were obtained from psychiatric services. This was to be expected, since the hospitals selected were primarily acute general hospitals. (The figures for psychiatric service reflected roughly the ratio of psychiatric to general acute hospitals in the nation as a whole.)

It is of interest that a larger proportion of the Aide category respondents failed to specify an area of patient care. This might be construed to indicate that the Aide/Orderly category of personnel is less specialized than other categories (or assumed as needed), or it might mean that they are not as well informed regarding their work as the other categories.

PERSONAL CHARACTERISTICS – There were no remarkable findings noted in the general characteristics of the respondents (table 5). There were greater numbers of Registered Nurses in the 20-29 age group, more Aides in the youngest group (under 20), and more Aides and LVN/LPNs in the oldest age group (50 years and over). A larger proportion of males was noted in the Aide group, although 95 percent of all respondents were females. The income distribution was as expected, the larger percentage (54.7 percent) of RNs receiving $7-10,000 per year, the majority of LVN/LPNs (63.1 percent) falling in the $4-7,000 category, and most of the Aides (70.2 percent) earning less than $4,000 per year. There appears to be, however, a good deal of overlap downward in the salary ranges for the three categories of personnel. Only three (2.2 percent) of the RNs reported receiving $10,000 or more per year.

Education or training followed the pattern which might be expected for the country as a whole. The Aides received on-the-job training – usually of less than one year. The LVN/LPNs were trained primarily in one-year programs. Among the RNs, 83 percent were diploma-school graduates. Only five (3.6 percent) were Associate degree graduates and 15 (10.9 percent) were graduates of baccalaureate programs. In general, the respondents to this survey may be considered fairly typical of the general population of employees in the nursing fields.*

The respondent population appeared to be unusually stable (perhaps because an effort was made to include suburban and rural facilities as well as urban). An unexpectedly high proportion had been employed at their present facilities for more than two years.

DATA ANALYSIS

For the purposes of this report, only a selected portion of the available data will be presented and analyzed. The rationale behind the selectivity of this report is that a preliminary examination of certain important parameters of task performance would both provide initial clues for the construction of curricula and suggest the lines along which subsequent and more comprehensive analysis should proceed. An additional factor in the decision to limit the scope of this report is the sheer amount of data available. For example, to examine one dimension of task performance, frequency, for the nursing occupations requires scrutiny of 317 tasks by three categories of personnel. A rational plan for the complete analysis of the task inventory survey requires some segmentation of effort.

---

*See *Facts About Nursing: A Statistical Summary.* 1969 Edition. New York: National Nurses' Association, 1969, p. 10.

Table 5.

DESCRIPTION OF RESPONDENTS BY POSITION TITLE AGE, SEX, MARITAL STATUS, INCOME, EDUCATION, AND EXPERIENCE

	Position Title							
	RN		LVN/LPN		Aide		Total	
Item	N=137	100%	N=130	100%	N=131	100%	N=398	100%
Age								
Under 20	0	0.0	2	1.5	4	3.1	6	1.5
20 - 29	59	43.1	35	26.9	35	26.7	129	32.4
30 - 39	33	24.1	30	23.1	31	23.7	94	23.6
40 - 49	20	14.6	28	21.5	27	20.6	75	18.8
50 - 59	20	14.6	29	22.3	26	19.8	75	18.8
60 and Over	3	2.2	6	4.6	7	5.3	16	4.0
No Answer	2	1.5	0	0.0	1	0.8	3	0.8
Sex								
Male	2	1.5	5	3.8	12	9.2	19	4.8
Female	134	97.8	125	96.2	119	90.8	378	95.0
No Answer	1	0.7					1	0.2
Marital Status								
Married	85	62.0	78	60.0	84	64.1	247	62.1
Single	36	26.3	24	18.5	22	16.8	82	20.6
Divorced, Widowed Separated	14	10.2	28	21.6	25	19.1	67	16.8
No Answer	2	1.5					2	0.5

Table 5. (Continued)

DESCRIPTION OF RESPONDENTS BY POSITION TITLE AGE, SEX, MARITAL STATUS, INCOME, EDUCATION, AND EXPERIENCE

	Position Title							
	RN		LVN/LPN		Aide		Total	
Item	N=137	100%	N=130	100%	N=131	100%	N=398	100%
Annual Income								
Less than $4,000	6	4.4	41	31.6	92	70.2	139	34.9
$4,000 - 5,999	49	35.8	82	63.1	35	26.7	166	41.7
$7,000 - 9,999	75	54.7	2	1.5	0	0.0	77	19.3
$10,000 and Over	3	2.2	0	0.0	0	0.0	3	0.8
No Answer	4	2.9	5	3.8	4	3.1	4	1.0
Highest Grade Before Entering Education or Training Program								
1 - 8 Years	0	0.0	3	2.3	7	5.3	10	2.5
8 - 11 Years	2	1.5	19	14.6	39	29.6	60	15.1
12 Years	94	68.6	84	64.6	57	43.5	235	59.0
Some College	26	19.0	20	15.4	27	20.6	73	18.3
Baccalaureate or More	14	10.2	1	0.8	-	-	15	3 8
No Answer	1	0.7	3	2.3	1	0.8	5	1.3
Training Program								
On-the-Job Training	1	0.7	19	14.6	96	73.3	116	29.1
Certificate or Diploma	114	83.2	100	76.9	21	16.0	235	59.0
AA	5	3.6	-	-	-	-	5	1.3
BA or More	15	10.9	1	0.8	-	-	16	4.0
No Answer	2	1.5	10	7.7	14	10.7	26	6.5

Table 5. (Continued)

DESCRIPTION OF RESPONDENTS BY POSITION TITLE
AGE, SEX, MARITAL STATUS, INCOME, EDUCATION, AND EXPERIENCE

Item	Position Title							
	RN		LVN/LPN		Aide		Total	
	N=137	100%	N=130	100%	N=131	100%	N=398	100%
Time in Present Position								
1 - 6 Months	29	21.2	16	12.3	20	15.3	65	16.3
7 - 11 Months	10	7.3	14	10.8	11	8.4	35	8.8
1 - 2 Years	40	29.2	36	27.7	29	22.1	105	26.4
3 - 4 Years	17	12.4	23	17.6	33	25.2	73	18.3
5 - 10 Years	23	16.9	20	15.4	23	17.6	66	16.6
10 Years Plus	15	9.8	19	14.6	14	10.8	48	12.1
No Answer	3	2.2	2	1.5	1	0.8	6	1.5
Prior Experience								
1 - 6 Months	12	8.8	4	3.1	16	12.2	32	8.0
7 - 11 Months	3	2.2	11	8.5	4	3.1	18	4.5
1 - 2 Years	30	21.9	22	16.9	26	19.9	78	19.6
3 - 4 Years	15	11.0	24	18.4	24	18.3	63	15.8
5 - 9 Years	34	24.7	32	24.5	26	19.8	92	23.1
10 Years Plus	41	29.7	35	27.0	34	26.1	110	27.6
No Answer* (part are less than 1 year)	2	1.5	2	1.5	1	0.8	5	1.3

*Prior experience - same job title only.

This report focuses on three major dimensions of task performance. The first dimension is the relative frequency of task performance by various personnel within 16 nursing areas. The major emphasis here is the characterization of the routine occupational activities of nursing personnel, indicating specifically what kinds of personnel are performing what kinds of tasks with what frequency.

Of particular interest for this report is how task activities are differentiated by occupational category. The issue of differentiation may be divided into two parts. First, what, in fact, is the distribution of performance among the three occupations of concern? The frequency data provide the answer to this question. The second part of the issue is the appropriateness of the distribution; i.e., is the task the primary responsibility of personnel with the training to discharge it adequately, or is it being performed largely by personnel who are undertrained or overtrained relative to its demands? Is it the case that a task which should be differentiated by level of competence is being shared equally by the three categories of personnel surveyed? To deal with this question, the report relies upon the expert judgment of the Technical Advisory Committee concerning the "appropriate level" of skill, the second dimension of task performance to be considered in this preliminary analysis.

The third dimension of concern here is "criticality." It is included in order to arrive at a preliminary assessment of those tasks which, in terms of expert opinion, are critical to the efficient and effective operation of nursing services. The frequency and appropriate level data, taken in conjunction with the rating on criticality assigned to each task, will permit exploration of such questions as: How frequently are critical services performed? What level of personnel is most involved in their execution? Are the personnel most involved likely to have the level of training necessary to perform critical tasks competently? Answers to questions such as these are of obvious relevance for the planning of curricula for both preservice and inservice programs.

DATA PRESENTATION

Tasks will be analyzed within the 16 nursing areas delineated. At the conclusion of the report, a summary of the implications of the data examined will be presented along with recommendations for further analysis.

The measure of frequency of task performance is defined here as the percentage of respondents indicating that they perform a particular task "daily" or "almost daily" or "several times a week." Frequency of task performance will be presented for all personnel taken collectively, and for each of the three occupational groupings — the Registered Nurse, Licensed Practical/Vocational Nurse, and Nurses' Aide.

Tasks within a nursing area will be presented in rank order (most frequently to least frequently) by frequency of performance by all personnel. Frequency and rank will also be given for each of the three nursing occupations. Ranking is employed in order to deal with the issue of "how frequent is frequent?" — i.e., by making the criterion of a "frequently performed task" relative to the functional area in question.

Criticality is represented by the mean score accorded a task on the following scale by the National Technical Advisory Committee on Nursing:

1. *Flexible.* Relatively unimportant whether the task is done a certain way or not.
   Example: Read to patients.

2. *Moderate Criticality.* Is normally done within limited tolerance.
   Example: Put up side rails.

3. *Average Criticality:* Deviation from prescribed methods could result in minor delays or loss of resources.
   Example: Administer enema.

4. *Above-Average Criticality.* Very little tolerance may be allowed without risk to worker or loss of resources.
   Example: Maintain isolation technique.

5. *Highly critical.* Must be done within strict parameters to avoid irreversible loss of health or expensive equipment.
   Example: Administer intravenous medications.

The criticality score will also be assigned a rank, permitting an analysis of relative criticality of tasks as well as an assessment in terms of absolute scale values.

Appropriate level is defined by the judgment of the Advisory Committee. This judgment took the following form:

NONE:	The task is not appropriately a nursing function.
ALL:	The task is appropriate to all nursing personnel in question, i.e., RN, LVN/LPN, and Nurses' Aide levels.
SOME:	The task is appropriate to one or two but not all nursing personnel in question, as specified (e.g., RN, or RN, LVN/LPN, etc.).

Appropriate level will be indicated for each task, appended to its description.

In order to indicate the extent to which task performance is differentiated among the nursing occupations, percentage differences will be computed among RNs, LVN/LPNs, and Nurses' Aides. These figures will serve to assess the extent to which a particular occupation performs the task more or less frequently than one or both of the other occupations. The sign (+ or -) of the difference figure indicates the direction of the difference.

In assessing differentiation of task performance, the question naturally occurs, "How much difference makes a difference?" This issue will be dealt with in two ways. First, a Chi-square has been computed on tables of frequency of task performance (Frequent/Infrequent) and occupational category (RN/LVN-LPN/Aide) for each task. A Chi-square large enough to attain the 0.05 level of significance or less will be taken to mean that for the given task, there is a low probability that the pattern of association of occupational category and frequency of task performance was due to chance. Hence, "statistical significance" provides one criterion for attaching importance to differences in the frequency of task performance observed among the nursing occupations.

The second guideline for analyzing differences in frequency is more of a rule-of-thumb nature, involving comparison of the size of differences. A small difference, even though significant in the statistical sense, may have little or no practical import for the construction of curricula. In addition, an assessment of the importance of task differentiation will take into account such other factors as the criticality of the task in question.

Whenever tasks are differentiated into a series of subtasks within a nursing area, a second set of tables will be presented which display such subdivided tasks as units of analysis. It is often the case that the differentiated elements of a task (e.g., "Carry out aseptic technique") are scattered throughout the overall distribution of frequency of task performance, thus destroying the unity of the task as the object of analysis. The second set of tables is provided to compensate for this.

In order to compare the 16 areas in terms of relative frequency of performance and criticality, medians will be computed for the distributions of interest. The median may be interpreted as a value which has just as many cases below it as above it. In the case of the distribution of tasks within a nursing area, the median (or, as it will sometimes be referred to here, the midmost) task is that task which has just as many tasks above as below it. If the number of tasks within an area is even, the midmost task will be located between two tasks.

The frequency of the midmost task will be used to characterize the area as one in which tasks are performed frequently or infrequently, as the task may be. Medians for the distribution of criticality scores within nursing areas will also be reported. The array of median task frequencies and the median criticality scores for the 16 areas, as well as range of frequency of performance (all personnel) and range of criticality scores within the 16 nursing areas, are presented.

C. DATA ANALYSIS BY FUNCTIONAL AREA

1. Diversional Therapeutic and Assistance Activities

DESCRIPTION OF THE AREA

All tasks in this area have been grouped in Nursing Area A-1. By and large, the nine tasks comprising this functional area provide for patient contact with the world outside the hospital, either by assisting patients to communicate with it (e.g., No. 6, "Assist in writing letters, messages," and No. 7, "Assist in placing telephone calls"), or it to communicate with them (e.g., No. 8, "Receive and deliver messages and/or mail to patients"). Part of this contact involves providing the patient with certain amenities he could ordinarily obtain himself "on the outside" (e.g., No. 3, "Obtain and deliver supplies for patient's entertainment or recreation," and No. 9, "Obtain and deliver items for patient's personal use"). The prominent exception to this description of the tasks in this area is No. 5, "Assist in individual and group therapy." (See table 6.)

The most frequently occurring task (No. 8) is reported by 49.7 percent of all personnel as occurring "daily" or "almost daily," or "several times a week." The percentage figure for the least frequently occurring task (No. 4) is 2.0 percent. The range of frequency of task performance is 47.7 percent, which ranks 11th of 16 areas and subareas covered by the task survey. The midmost (median) task of the distribution of frequency of performance was No. 2, "Assist and/or participate in recreational activities . . . ," 21.9 percent, all personnel. Functional Area A ranked 11th in the distribution of 16 median frequencies for the areas surveyed.

The spread of criticality scores was from 3.0 to 1.16, i.e., from "average" to "flexible" on the criticality scale. The range of criticality scores was 1.84, which ranked eighth out of 16. The median criticality score is 1.38, lowest for all the areas. Seven out of the nine tasks in this area received a score equal to or less than 2. The two tasks rated most critical were No. 2 (2.5) and No. 5 (3.0), which ranked fifth and seventh, respectively, in terms of frequency of occurrence.

Four of the nine tasks in this area were judged by the Advisory Committee not to be nursing functions (Nos. 3, 4, 8 and 9). Four tasks were thought to be appropriate for all personnel (Nos. 1, 2, 6 and 7). The remaining task (No. 5) was deemed to be the responsibility of the RN.

It is worth noting that three of the four most frequently performed tasks in this area were not judged to be nursing functions. The first ranked task (No. 8) displays no significant difference in the frequency of its performance by the three categories of personnel. The second ranked task (No. 9) is performed most frequently by LVN/LPNs and Aides ($p \leq 0.001$). Task No. 3 was ranked fourth, and showed a graded pattern of differentiation with Aides the most frequent performers, followed by LVN/LPNs and RNs in that order ($p \leq 0.001$). The remaining nonnursing task was the least frequently performed, and showed no significant differentiation in frequency of performance by category of personnel.

Three of the four tasks designated as appropriate to all personnel (Nos. 1, 6 and 7) showed no significant differences in performance by the RN, LVN/LPN and Aide. Task No. 2 was most

Table 6. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF DIVERSIONAL THERAPEUTIC AND ASSISTANCE ACTIVITIES

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
8. Receive and deliver messages and/or mail to patients.	NONE	1	49.7	1	46.0	1	53.8	2	49.6	-8%	-4%	+4%	1.5	4.3	n.s.
9. Obtain and deliver items for patients' personal use.	NONE	2	44.5	3	25.5	2	51.5	1	57.3	-26%	-31%	-5%	1.33	7.5	.001
7. Assist in placing telephone calls.	ALL	3	41.0	2	33.6	3	46.2	3	43.5	-12%	-10%	+2%	1.16	9.0	n.s.
3. Obtain and deliver supplies for patients' entertainment or recreation.	NONE	4	23.1	4	13.1	5	22.3	4	34.4	-9%	-21%	-12%	1.5	4.3	.001
2. Assist and/or participate in recreational activities.	ALL	5	21.9	6.5	9.5	4	23.1	5	33.6	-13%	-24%	-11%	2.5	2.0	.001
1. Read to patients.	ALL	6	12.8	6.5	9.5	6	13.8	6	15.3	-4%	-5%	-1%	1.33	7.5	n.s.
5. Assist with individual and group therapy.	RN	7	9.5	5	10.2	7	9.2	8	9.2	+1%	+1%	0	3.0	1.0	n.s.
6. Assist in writing letters, messages.	ALL	8	9.3	8	8.0	8	6.9	7	13.0	+1%	-5%	-6%	1.5	4.3	n.s.
4. Assist and/or participate in occupational activities with patients.	NONE	9	2.0	9	1.5	9	2.3	9	2.3	0	0	0	2.0	3.0	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

frequently performed by the Aide ($p \leq 0.001$). Task No. 5, assigned to the domain of the RN by the Advisory Committee, was not significantly differentiated in performance.

GENERAL REMARKS

Functional Area A is characterized by the low criticality of its component tasks, the relatively narrow spread of frequency of performance, and a comparatively low median frequency of performance. This suggests that the task activities covered in this area form a more or less homogeneous grouping of patient services which, in some sense, are relatively unimportant compared to other services, and infrequently offered. But, in another view, these tasks probably assist the patient in adjusting comfortably to his stay in the hospital, and hence to a favorable outlook on his hospital experience.

The patterns of task activity for the four most frequently performed tasks sketched just above most probably reflect the general organization of work on the ward. The nurses' station is a natural message center and it is not surprising to see that all nursing personnel are involved in relaying messages and delivering mail. For those tasks which are more time-consuming and require leaving the floor to perform (e.g., obtaining items for patient's personal use), the utilization of less essential personnel is to be expected.

The prominent position of nonnursing tasks in this area, their low criticality and frequency, suggest the following with regard to curricular development. It is obvious that, with the possible exception of task Nos. 2 and 5, no specific training is called for. However, in developing materials for an overall orientation to the actual round of work in the hospital setting, brief reference to the variety of small services nursing personnel are called upon to perform in the course of the day's work might prove useful. This is particularly the case with personnel moving from the training situation to their regular positions. Knowing what to expect can be important for adjustment to a new job. This point will be kept in mind when examining subsequent functional areas.

2. Safety and Comfort

PATIENT PROTECTION

DESCRIPTION OF THE AREA – In all, 19 tasks are included in this subdivision of Functional Area B. These activities, viewed as oriented to "patient protection," may be further specified into three groupings of subtasks: (a) explaining and applying safety regulations and caring for patients (Nos. 12.1-4); (b) carrying out aseptic technique (Nos. 15.1-7); and (c) carrying out isolation technique (Nos. 16.1-4). Four out of 19 tasks (21 percent) are classified under (a); seven out of 19 (37 percent) fall within the domain of (b); and four of 19 (21 percent) belong to (c). Of the remaining four tasks, three (15.7 percent) can be viewed as administrative procedures related to patient protection (e.g., No. 10, "Count, sign for, and place patient's personal possessions in safe place," also Nos. 13 and 14); the remaining task (No. 11, "Use precautions in administering and handling drugs . . .") could be classified with (a) above.

In terms of frequency of performance by all personnel, patient protection activities vary from 91.5 percent (No. 12.3, "Adjust side rails") to 6.5 percent (No. 14, "Prepare accident and safety reports"). (See table 7.) The range of distribution is 85.0 percent, largest of any area surveyed. The midmost (median) task is No. 11, "Use precautions in administering and handling drugs," 43.7 percent, all personnel. This is the fourth highest median frequency of performance of the 16 nursing areas covered. The nine tasks above the median all exceed 50 percent in terms of frequency of performance, contrasting markedly with Functional Area A, in which no task exceeded 50 percent.

The criticality scores assigned these tasks vary from 4.5 to 2.16. The median criticality score is 3.65, third highest relative to the other areas. Sixteen of the 19 tasks were assigned scores of 3.0 or above, i.e., were judged to be of "average" criticality or above. Thirteen of these 16 were clustered around criticality scale value 4 (3.66-4.5), "above average" criticality. As might be expected, these patient protection activities are viewed by the Advisory Committee as more critical than the "diversionary" tasks comprising Functional Area A.

A little less than one-half (8 of 19) of the tasks were judged to be undifferentiated; that is, as appropriate to all three occupational categories (Nos. 11, 12.1-4, 16.1-3). Seven out of 19 were deemed to be the responsibility of the RN and LVN/LPN (Nos. 15.1-7). Three of 19 were not seen to be nursing functions (Nos. 10, 13, 16.4) and no judgment was rendered on one task (No. 14).

With respect to actual performance, five of the eight tasks deemed appropriate for all personnel were significantly differentiated ($p \leq 0.05$ to 0.001); Nos. 22.1, 12.4, and 16.3 displayed a pattern of more frequent performance by the LVN/LPN and Aide than the RN; No. 16.2 was most frequently performed by the LVN/LPN and No. 11 most frequently performed by the RN. The remaining three tasks (Nos. 12.2, 12.3, and 16.1) showed no significant differences in frequency of performance by category of personnel.

GENERAL REMARKS – An examination of the four most frequently occurring tasks (No. 12.3, "Adjust side rails"; No. 12.4, "Adjust height of bed"; No. 16.2, "Wash hands"; and No. 15.1, "Open sterile packages and packs") suggests that, by the criterion of relative frequency, these four tasks are commonplace features of daily work activities within this subarea. The two most frequent tasks (Nos. 12.3 and 12.4) are deemed appropriate to all personnel, and the data indicate that, practically speaking, there is no important differentiation in terms of performance.* Both tasks are at the bottom of the distribution of criticality within this area. Obviously, these findings are not spectacular, and have little significance for curricular development in and of themselves.

The third most frequent task (No. 16.2, "Wash hands") is one of the subtasks of the more comprehensive activity, "Carrying out isolation technique." It is performed most frequently by the LVN/LPN, followed by the Aide and the RN in that order. It has the criticality score of 3.66. It is

---

*Task No. 12.4 displays a slight but statistically significant tendency for more frequent performance by the LVN/LPN and Aide. This task is a good example of the need for caution in assessing the import of statistical significance. The percentage figures are 81 percent versus 94.6 percent versus 89.3 percent for the RN, LVN/LPN and Aide, respectively. Were the task of a character requiring specialized training, all three categories of personnel would properly receive such education, the statistically significant differences among them notwithstanding.

Table 7. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-1. Patient Protection

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
12.3 Adjust side rails.	ALL	1	91.5	1	88.3	2	91.5	1	94.7	-4%	-7%	-3%	2.16	18.5	n.s.
12.4 Adjust height of bed.	ALL	2	88.2	2	81.0	1	94.6	2	89.3	-14%	-8%	+6%	2.16	18.5	.01
16.2 Wash hands.	ALL	3	65.3	8	56.2	3	76.2	3	64.1	-20%	-8%	+12%	3.66	7.14	.01
15.1 Open sterile packages and packs.	RN,LVN	4	63.1	3	78.1	4	74.6	7	35.9	+3%	+42%	+39%	4.0	2.5	.001
15.3 Pour sterile solutions.	RN,LVN	5	53.5	6	69.3	5	65.4	10	25.2	+4%	+44%	+40%	3.83	4.3	.001
10.0 Count, sign for, and place patient's personal possessions in safe place.	NONE	6	53.3	11	43.1	7.5	60.8	4	56.5	-18%	-14%	+4%	2.33	17.0	.01
15.7 Handle sterile equipment.	RN,LVN	7	53.0	7	65.0	6	64.6	8	29.0	0	+36%	+36%	3.83	4.3	.001
12.2 Explain and apply smoking regulations.	ALL	8	52.3	9	51.1	9	57.7	6	48.1	-7%	+3%	+10%	3.0	15.5	n.s.
15.2 Apply sterile dressings and bandages.	RN,LVN	9	52.0	5	70.8	7.5	60.8	13	23.7	+10%	+47%	+37%	4.0	2.5	.001
11.0 Use precautions in administering and handling drugs, etc.	ALL	10	43.7	4	75.2	12	44.6	17	9.9	+30%	+65%	+35%	4.5	1.0	.001
12.1 Apply restraints	ALL	11	43.0	13	32.1	11	47.7	5	49.6	-16%	-18%	-2%	3.0	15.5	.01
15.6 Apply sterile gloves.	RN,LVN	12	38.2	12	41.6	10	48.5	11.5	24.4	-7%	+18%	+25%	3.66	7.14	.001
13.0 Obtain patient and/or family consent for treatment.	NONE	13	30.2	10	48.9	14	26.9	14	13.7	+22%	+35%	+13%	3.5	14.0	.001
16.4 Dispose of contaminated materials and equipment.	NONE	14	27.9	14	19.7	13	36.9	9	27.5	-17%	-8%	+9%	3.66	7.14	.01
16.3 Take into and remove equipment and supplies from contaminated room.	ALL	15	21.4	15	13.9	15	26.2	11.5	24.4	-12%	-10%	+2%	3.66	7.14	.05
16.1 Apply and remove gown and mask.	ALL	16	15.3	17	11.7	16	21.5	15	13.0	-10%	-1%	+9%	3.66	7.14	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

Table 7. (Continued) APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-1. Patient Protection

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
15.4 Do sterile scrub.	RN,LVN	17	13.1	16	13.1	17	17.7	18	8.4	-5%	+5%	+10%	3.83	4.3	n.s.
15.5 Apply sterile gown.	RN,LVN	18	12.6	18	10.9	18	16.2	16	10.7	-5%	0	+5%	3.66	7.14	n.s.
14.0 Prepare accident and safety reports.	NO JDGMT	19	6.5	19	8.8	19	6.9	19	3.8	+2%	+5%	+3%	3.66	7.14	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

tempting to conclude from the frequency figures that LVN/LPNs have more need to wash their hands than other categories of personnel, presumably due to involvement in activities which call for this precaution. It could equally be the case that the other two categories are neglectful of this practice, although it is difficult to view the RN in this light. In any event, such a basic precaution is certainly a part of any training program for any nursing occupation.

The fourth task (No. 15.1) rated 4.0 on the scale ("above average") and is deemed the proper function of the RN and LVN/LPN. This is, in fact, how the performance of the task was distributed among the occupations, there being little difference (3 percent) between RN and LVN/LPN, and sizable differences between these two categories and the Aide (42 and 39 percent, respectively; $p \leq 0.001$). However differentiated, over one-third of the Nurses' Aides reported performing this task frequently. (When viewed with respect to the series of the seven tasks specifying the activity of "Carrying out aseptic technique," No. 15.1 is the most frequently occurring task for the Nurses' Aide, as it is for the RN and LVN/LPN.) (See table 8.)

Another task classified under aseptic procedure (No. 15.2, "Apply sterile dressings and bandages") ranked eighth in terms of frequency of performance. It can be seen by consulting table 7 that this activity is deemed the proper function of the RN and LVN/LPN. Data on actual performance are in accordance with this judgment, the two higher skilled occupations being far more likely to perform the task ($p \leq 0.001$). However, as in the case of No. 15.1, participation in this task by Nurses' Aides is not insignificant. One-quarter of the Aides responding indicated that they frequently performed this task, rated at 4.0 ("above average") on the criticality scale. A similar pattern is found for task No. 15.3 ("Pour sterile solutions"), rated 3.83 on the criticality scale, and No. 15.6 ("Apply sterile gloves"), at 3.66. Even though task Nos. 15.1, 15.2, 15.3, and 15.6 are clearly differentiated in the direction judged appropriate by the Advisory Committee, the need for some attention to instruction in aseptic technique at all occupational levels seems apparent. If, in hospital practice, Aides are assigned duties from time to time which, in some sense, are more appropriate to more highly trained specialties, a curriculum tailored to the needs of the actual workplace must recognize this fact. It should be noted that in the series of tasks comprising aseptic technique, the spread of criticality scores is from 3.66 to 4.0, indicating the importance assigned to these activities.

The sixth rated task (No. 10, "Count, sign for, and place patient's personal possessions in safe place") is not judged to be a nursing task. It ranks 11th in frequency for the RN, 7.5 for the LVN/LPN, and fourth for the Aides, and tends to be more frequently performed by the latter two occupations. Like the nursing tasks discussed in Functional Area A, this procedure constitutes a recurring service rendered by nursing personnel, one which the orientation segment of a curriculum might include.

The task rated most critical within this division of Functional Area B ranked tenth (43.7 percent) in frequency (No. 11, "Use precautions in administering drugs"). In terms of appropriate level, all personnel are deemed responsible for exercising care in drug handling. As should be expected, however, the task is sharply differentiated in actual practice (see table 8). It is the fourth most frequent for the RN, 12th for the LVN/LPN, and 17th for the Aide. Education for this task, rated 4.5 on the criticality scale (between "above average" and "highly critical"), is obviously a basic part of any nursing curriculum. Even though infrequently performed by Nurses' Aides, it seems appropriate that training in the fundamentals of drug safety be provided them as well.

Table 8. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-1. Patient Protection (Sub-tasks)

Task		Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
			All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
			Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
12.0	Explain and apply safety regulations in caring for patients:															
12.3	Adjust side rails.	ALL	1	91.5	1	88.3	2	91.5	1	94.7	-4%	-7%	-3%	2.16	3.5	n.s.
12.4	Adjust height of bed.	ALL	2	88.2	2	81.0	1	94.6	2	89.3	-14%	-8%	+6%	2.16	3.5	.01
12.2	Smoking regulations.	ALL	3	52.3	3	51.1	3	57.7	4	48.1	-7%	+3%	+10%	3.0	1.5	n.s.
12.1	Apply restraints.	ALL	4	43.0	4	32.1	4	47.7	3	49.6	-16%	-18%	-2%	3.0	1.5	.01
15.0	Carry out aseptic technique:															
15.1	Open sterile packages and packs.	RN,LVN	1	63.1	1	78.1	1	74.6	1	35.9	+3%	+42%	+39%	4.0	1.5	.001
15.3	Pour sterile solutions.	RN,LVN	2	53.5	3	69.3	2	65.4	3	25.2	+4%	+44%	+40%	3.83	3.3	.001
15.7	Handle sterile equipment.	RN,LVN	3	53.0	4	65.0	3	64.6	2	29.0	0	+36%	+36%	3.83	3.3	.001
15.2	Apply sterile dressings and bandages.	RN,LVN	4	52.0	2	70.8	4	60.8	5	23.7	+10%	+47%	+37%	4.0	1.5	.001
15.6	Apply sterile gloves.	RN,LVN	5	38.2	5	41.6	5	48.5	4	24.4	-7%	+18%	+25%	3.66	6.5	.001
15.4	Do sterile scrub.	RN,LVN	6	13.1	6	13.1	6	17.7	7	8.4	-5%	+5%	+10%	3.83	3.3	n.s.
15.5	Apply sterile gown.	RN,LVN	7	12.6	7	10.9	7	16.2	6	10.7	-5%	0	+5%	3.66	6.5	n.s.
16.0	Carry out isolation technique:															
16.2	Wash hands.	ALL	1	65.3	1	56.2	1	76.2	1	64.1	-20%	-8%	+12%	3.66	1.25	.01
16.4	Dispose of contaminated materials and equipment.	NONE	2	27.9	2	19.7	2	36.9	2	27.5	-17%	-8%	+9%	3.66	1.25	.01
16.3	Take into and remove equipment and supplies from contaminated room.	ALL	3	21.4	3	13.9	3	26.2	3	24.4	-12%	-10%	+2%	3.66	1.25	.05
16.1	Apply and remove gown and mask.	ALL	4	15.3	4	11.7	4	21.5	4	13.0	-10%	-1%	+9%	3.66	1.25	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Obtaining patient or family consent for treatment (No. 13) ranked 13th (30.2 percent) in frequency of performance. Although it was not deemed a nursing function, almost one-third of all nursing personnel and nearly half (48.9 percent) of RNs reported performing it frequently. The responsibility for the task was clearly differentiated by skill level ($p \leq 0.001$), the RN performing it more frequently than the Aide. It was assigned a score of 3.5 on the criticality scale. While further analysis of the dimensions of this task is required (e.g., in terms of its rating on the "human interaction" and "cognitive difficulty" scales as well as the data on level of supervision), it would seem that some training in the performance of this activity would be desirable.

PERSONAL HYGIENE AND GENERAL COMFORT

DESCRIPTION OF THE AREA – Nursing Area B-2, "Personal Hygiene and General Comfort," may be further classified into five domains of task activity: (a) making the patient's bed (Nos. 18.1-3); (b) assisting the patient to dress and undress (Nos. 22 and 26); (c) general grooming (Nos. 19.1-2, 17, 20, 21, 23); (d) skin care (Nos. 24.1-5); (e) use of comfort devices (Nos. 25 and 27.1-6). The most frequently occurring task was No. 26, "Change soiled linen and clothes" (80.4 percent, all personnel). It may be noted that this task was also the activity most frequently performed by all three categories of personnel (see table 9), although RNs performed it much less frequently (58.4 percent) than LVN/LPNs and Aides (91.5 and 92.4 percent, respectively). The least frequently occurring task was No. 19.2, "Give or assist patient in shampoo" (7.8 percent, all personnel). The range of frequency of performance was 72.6 percent, sixth highest of the 16 areas and subareas under scrutiny. The midmost task was No. 24.5, "Give general skin care to patients with decubitus ulcers" (32.2 percent, all personnel). The frequency of the median task was seventh highest of all the areas. Functional Area B-2 stands close to the middle position in the array of functional areas and subareas.

In terms of criticality, scores varied from 1.50 to 3.83, with a median score of 2.04 ("Moderate" criticality), close to the bottom of the distribution of median criticality scores (14th) across the 16 nursing areas. Within the area "Personal Hygiene and General Comfort" itself, the spread of criticality scores above the median task was 1.5 to 2.83; below, it was 1.66 to 3.83, suggesting that the most critical tasks tend to be performed less frequently. The most critical tasks (criticality scores of 3.02-3.83, "average" to "above average" criticality) were concentrated in the No. 24.1-5 series. "General skin care" serves clear-cut preventive and therapeutic purposes. Frequency of performance of "skin care" tasks ranges from 38.7 to 27.1 percent. LVN/LPNs and Aides tend to perform these tasks more frequently than RNs.

In the judgment of the Advisory Committee, 21 of the 23 tasks in this subarea are appropriate to all personnel (see table 9). No judgment was given for one task (No. 18.3); another task (No. 24.2) was deemed a function of the RN and LVN/LPN. However, the pattern of task performance is clearly differentiated. The preponderance of tasks in this area are most frequently performed by the LVN/LPN and Nurses' Aide, including task No. 24.2, which was most frequently performed by the Aide. Task Nos. 18.3, 24.1, and 27.1 tended to be performed most frequently by the LVN/LPN and task No. 19.2 by the Aide.

GENERAL REMARKS – Compared to Nursing Area 1 of Functional Area B, Nursing Area 2 is composed of less critical tasks (the median criticality score for Area B-1 was 3.65, versus 2.04 for Area B-2). While a little less than one-half (8 of 19) of the tasks in B-1 were judged to be

Table 9. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-2. Personal Hygiene and General Comfort

Task		Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.") All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		Percent Difference RN Versus		LVN Versus	Criticality		p**
			Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
26.0	Change soiled linen and clothes.	ALL	1	80.4	1	58.4	1	91.5	1	92.4	-34%	-34%	0	2.33	14.0	.001
22.0	Assist patient with dressing and undressing.	ALL	2	73.4	2	51.8	3.5	80.8	2	88.5	-29%	-37%	-8%	1.83	19.0	.001
18.1	Make patient's bed, occupied.	ALL	3	69.8	4	43.1	5	80.0	3	87.8	-37%	-45%	-8%	2.16	15.25	.001
18.2	Make patient's bed, unoccupied.	ALL	4	68.6	3	45.3	2	81.5	6	80.2	-37%	-35%	+2%	1.5	23.0	.001
21.0	Give or assist patient with oral hygiene.	ALL	5	66.3	6	38.7	3.5	80.8	5	80.9	-42%	-42%	0	1.83	7.5	.001
17.0	Give or assist patient to take bath.	ALL	6	65.3	5	39.4	7	76.2	4	81.7	-37%	-43%	-6%	2.16	15.25	.001
25.0	Give backrubs.	ALL	7	61.8	9.5	32.8	6	77.7	7	76.3	-45%	-43%	+2%	2.16	15.25	.001
19.1	Comb patient's hair.	ALL	8	60.3	7.5	35.0	8	71.5	8	75.6	-37%	-41%	-4%	1.66	20.3	.001
27.3	Use of sheepskins, lambswool pads.	ALL	9	47.5	9.5	32.8	10	54.6	9	55.7	-22%	-23%	-1%	2.66	9.25	.001
18.3	Make . . . recovery, anesthetic bed.	NO JDGMT	10	45.5	7.5	35.0	9	56.2	11	45.8	-21%	-11%	+10%	1.66	20.3	.01
24.3	Give general skin care to patients in restraints.	ALL	11	38.7	12.5	18.2	11	48.5	10	50.4	-31%	-32%	-1%	3.16	4.0	.001
24.5	Give general skin care to patients with decubitus ulcers.	ALL	12	32.2	11	21.2	13	40.0	12.5	35.9	-19%	-15%	+4%	3.83	1.3	.01
27.2	Use footboards.	ALL	13.5	27.9	15.25	14.6	14	36.2	14	33.6	-21%	-19%	+2%	2.66	9.25	.001
24.1	Give general skin care to patients in casts.	ALL	13.5	27.9	15.25	14.6	12	40.8	18.5	29.0	-26%	-14%	+12%	3.0	5.5	.001
24.4	Give general skin care to comatose and semicomatose patients.	ALL	15	27.4	12.5	18.2	15	35.4	18.5	29.0	-17%	-11%	+6%	3.83	1.3	.01
24.2	Give general skin care to patients in traction.	RN,LVN	16	27.1	15.25	14.6	16	31.5	12.5	35.9	-17%	-21%	-4%	3.83	1.3	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 9. (Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-2. Personal Hygiene and General Comfort

Task		Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
			All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
			Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
20.0	Care for or assist patient to care for toenails and fingernails.	ALL	17	24.9	14	15.3	17	29.2	16	30.5	-14%	-16%	-2%	2.16	15.25	.01
27.5	Use air rings, doughnuts.	ALL	18	23.6	15.25	14.6	18	26.9	17	29.8	-12%	-15%	-3%	2.83	7.5	.01
27.1	Use overbed cradles.	ALL	19	20.6	20	11.7	19	25.4	20	25.2	-13%	-13%	0	2.66	9.25	.01
23.0	Assist with and/or shave male patients.	ALL	20	19.3	23	4.4	20	23.1	15	31.3	-19%	-27%	-8%	2.5	13.0	.001
27.4	Use trochanter rolls, sandbags.	ALL	21	15.3	19	12.4	21	20.8	21.5	13.0	-9%	-1%	+8%	2.66	9.25	n.s.
27.6	Alternate pressure matresses.	ALL	22	14.1	21	10.2	22	20.0	23	12.2	-10%	-2%	+8%	3.0	5.5	n.s.
19.2	Give or assist patient in shampoo.	ALL	23	7.8	22	5.1	23	5.4	21.5	13.0	0	-8%	-8%	1.66	20.3	.05

---

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

differentiated, almost all of the tasks in B-2 were deemed appropriate to all levels of personnel. As indicated, task performance in B-2 was nevertheless differentiated in the direction of the LVN/LPN and Aide; the most critical series of tasks (Nos. 24.1-5) followed this pattern.

A picture that emerges here is that of a division of labor in which routine care, such as personal hygiene, is handled by less skilled personnel. The task most frequently performed by the RN is No. 26, "Change soiled linen and clothes" (58.4 percent), but this was done much more frequently by LVN/LPNs (91.5 percent) and Aides (92.4 percent). The eight most frequently performed tasks in terms of all personnel (almost one-third of the total tasks in Area B-2) were performed more frequently by LVN/LPNs and Aides. (See table 10.)

That tasks concerned with routine personal hygiene are allocated to less specialized personnel is not surprising. The judgment of the Advisory Committee that the vast majority of tasks in this subarea are appropriate to all nursing personnel can be interpreted as proposing that such tasks are part of the hospital routine that any nursing occupation can be expected to share. The judgment rendered on these commonplace activities does not, in this view, bear upon the actual allocation of effort by category of personnel (in terms of frequency of performance).

As indicated earlier, the most critical series of tasks are those grouped under the label, "General skin care." The general pattern was for these five activities to be most frequently performed by the LVN/LPN and Aide. An obvious implication is that attention should be given to the formulation of a unit of instruction on the techniques of general skin care in programs oriented to these two nursing occupations.

RELIGIOUS AND SPIRITUAL CARE

DESCRIPTION OF THE AREA – Six tasks comprise this nursing area. The most frequently occurring task overall is No. 33, "Assist patient in observing religious dietary restrictions" (10.3 percent, all personnel); the least frequently occurring is No. 31, "Participate, assist in the administration of sacraments" (0.3 percent, all personnel). (See table 11.) The range in frequency is 10 percent, ranked 16th over all areas. The midmost task falls between No. 29 (6.3 percent, all personnel) and No. 30 (3.8 percent, all personnel); the frequency of the median task can be viewed as 5.0 percent, also ranked 16th over all areas. It is obvious that the tasks in this subarea are, in terms of frequency, a minor segment of the work of nursing personnel.

Criticality scores varied from 3.33 to 1.66, with a median score of 2.68, a little below "average" criticality. Viewed with respect to the distribution of median criticality scores for all areas, B-3 ranked 12.5 in the bottom quarter of the distribution.

Five of the six tasks are considered by the Advisory Committee to be appropriate to all levels of personnel; the sixth task (No. 30, "Call clergy") was not deemed to be a nursing function. Only one task was differentiated in practice, No. 28, "Prepare patient to see clergy," 9.5 percent, all personnel, which was most frequently performed by the LVN/LPN and Aide ($p \leq 0.01$).

GENERAL REMARKS – Like the "diversionary" tasks of Area A, the services performed in this area might be viewed as contributing to the patient's adjustment to his illness, course of treatment, and prognosis. While infrequently performed, these activities may nonetheless be of considerable

Table 10. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-2. Personal Hygiene and General Comfort (Sub-tasks)

Task		Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
			All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
			Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
18.0	Make patient's bed:															
18.1	Occupied.	ALL	1	69.8	2	43.1	2	80.0	1	87.8	-37%	-45%	-8%	2.16	1.0	.001
18.2	Unoccupied.	ALL	2	68.6	1	45.3	1	81.5	2	80.2	-37%	-35%	+2%	1.5	3.0	.001
18.3	Recovery, anesthetic bed.	NO JDGMT	3	45.5	3	35.0	3	56.2	3	45.8	-21%	-11%	+10%	1.66	2.0	.01
19.0	Care for or assist patient to care for hair:															
19.1	Comb.	ALL	1	60.3	1	35.0	1	71.5	1	75.6	-37%	-41%	-4%	1.66	1.5	.001
19.2	Shampoo.	ALL	2	7.8	2	5.1	2	5.4	2	13.0	0	-8%	-8%	1.66	1.5	.05
24.0	Give general skin care to:															
24.3	Patients in restraints.	ALL	1	38.7	2.5	18.2	1	48.5	1	50.4	-31%	-32%	-1%	3.16	4.0	.001
24.5	Patients with decubitus ulcers.	ALL	2	32.2	1	21.2	3	40.0	2.5	35.9	-19%	-15%	+4%	3.83	1.3	.01
24.1	Patients in casts.	ALL	3	27.9	4.5	14.6	2	40.8	4.5	29.0	-26%	-14%	+12%	3.0	5.0	.001
24.4	Comatose or semicomatose patients.	ALL	4	27.4	2.5	18.2	4	35.4	4.5	29.0	-17%	-11%	+6%	3.83	1.3	.01
24.2	Patients in traction.	RN,LVN	5	27.1	4.5	14.6	5	31.5	2.5	35.9	-17%	-21%	-4%	3.83	1.3	.001
27.0	Use supportive and comfort devices:															
27.3	Sheepskins, lambswool pads.	ALL	1	47.5	1	32.8	1	54.6	1	55.7	-22%	-23%	-1%	2.66	3.25	.001
27.2	Footboards.	ALL	2	27.9	2.5	14.6	2	36.2	2	33.6	-21%	-19%	+2%	2.66	3.3	.001
27.5	Air rings, doughnuts.	ALL	3	23.6	2.5	14.6	3	26.9	3	29.8	-12%	-15%	-3%	2.83	2.0	.01
27.1	Overbed cradles.	ALL	4	20.6	5	11.7	4	25.4	4	25.2	-13%	-13%	0	2.66	3.25	.01
27.4	Trochanter rolls, sandbags.	ALL	5	15.3	4	12.4	5	20.8	5	13.0	-9%	-1%	+8%	2.66	3.25	n.s.
27.6	Alternating pressure mattresses.	ALL	6	14.1	6	10.2	6	20.0	6	12.2	-10%	-2%	+8%	3.0	1.0	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 11. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-3. Religious and Spiritual Care

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
33. Assist patient in observing religious dietary restrictions.	ALL	1	10.3	2	5.1	1	13.1	2	13.0	-8%	-8%	0	3.33	1.0	.05
28. Prepare patient to see clergy.	ALL	2	9.5	3	3.6	2	10.7	1	14.5	-7%	-11%	-4%	2.33	5.0	.01
29. Prepare patient to receive sacraments.	ALL	3	6.3	4	2.2	3	8.5	3	8.4	-7%	-6%	+1%	2.66	3.5	n.s.
30. Call clergy.	NONE	4	3.8	1	5.8	4	3.1	5	2.3	+3%	+4%	+1%	1.66	6.0	n.s.
32. Assist patient in religious rites.	ALL	5	2.3	5	1.5	5	0.8	4	4.6	+1%	-3%	-4%	2.66	3.5	n.s.
31. Participate, assist in administration of sacraments.	ALL	6	0.3	6	0.0	6	0.0	6	0.8	0	-1%	-1%	2.83	2.0	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.
**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

importance to the patient. It might be appropriate, in view of these considerations, to include in an orientation unit within a curriculum or inservice program reference to and possibly brief discussion of these services.

PATIENT NEED FOR MOVEMENT

DESCRIPTION OF THE AREA — Tasks in this nursing area fall into two broad categories. The first, (a), may be characterized as "Assisting patient in movement"; in turn, this category may be further specified to involve: (1) assistance in movement into and out of bed, positioning on the bed, and walking (task Nos. 34 through 39), and (2) the series of subtask Nos. 40.1-8, "Assist patient with therapeutic exercises." The second category, (b), "Moving the patient," can also be broken down into two parts: (1) moving the patient with use of equipment (Nos. 41-47); and (2) moving the patient without use of equipment (Nos. 34, 35).

Task No. 37 ("Assist patient to get in and out of bed") was the most frequent activity (85.4 percent, all personnel); task No. 40.8, "Assist patient in Buerger's exercise," was the least frequent (0.8 percent, all personnel). (See table 12.) Area B-4 ranked second among the 16 areas in terms of range of frequency (84.6 percent, four-tenths of a percentage point less than B-1). The midmost task was No. 40.3, "Assist patient with range of motion," 25.1 percent, all personnel. With respect to the frequency of the median task, B-4 ranked ninth relative to the other areas.

Criticality scores varied from 2.83 (approximately "average" criticality) to 4.0 ("above average" criticality) with the median score falling at 3.56, or almost exactly midway between "average" and "above average." This is comparable with the median for Area B-1 ("Patient Protection"), and ranks fifth (versus third for B-1) on the distribution of median criticality scores for all areas.

In terms of differentiation by category of personnel, 12 of the 21 tasks comprising Area B-4 were judged to be appropriate to all personnel (Nos. 34-39, 41, 43-45, and 40.7-8); three of the remaining nine tasks were deemed the province of the RN (Nos. 40.4-6), and another three fell to the RN and LVN/LPN (Nos. 40.1-3); two were judged not to be nursing functions (Nos. 46, 47) and one (No. 42) was ambiguously defined in part as a task not thought to be part of a nursing function, while the other part was seen to be the duty of all personnel.

As for the actual performance of these tasks, of the 12 activities rated as appropriate to all personnel, ten were significantly differentiated (at the level of 0.05 or less) across categories of personnel (Nos. 34-39, 40.7, 41, 43, and 45). The overall tendency was for more frequent performance by the LVN/LPN and Aide as opposed to the RN. Two tasks (Nos. 40.8 and 44), for which no statistical significance was found, conformed to this pattern. The bulk of these tasks fell in the category of b(1) and b(2) and were judged appropriate to all personnel despite a tendency to be differentiated toward performance by less skilled personnel.

In the judgment of the Advisory Committee, six of the eight tasks in the Series 40.1-8 (see table 13) were appropriately the responsibility of either the RN alone or the RN and LVN/LPN. Task Nos. 40.4-6 were in the latter category and task Nos. 40.1-3 in the former. Tasks assigned to the RN were differentiated, but in the direction of performance by the LVN/LPN and Aide ($p \leq 0.05$) and two of them were performed most frequently by the Aide (No. 40.5, "Assist with therapeutic exercises preparatory to chest surgery," and No. 40.6, ". . . following amputations."

Table 12. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT. B-4. Patient Need for Movement

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
37. Assist patient to get in and out of bed.	ALL	1	85.4	2	72.3	1	92.3	1	92.4	-20%	-20%	0	3.33	15.25	.001
35. Turn patient.	ALL	2	83.2	1	73.0	2	90.0	3	87.0	-17%	-14%	+3%	3.33	15.25	.001
38. Assist patient to transfer from bed to chair.	ALL	3	79.6	5	64.2	3	89.2	4	86.3	-25%	-22%	+3%	3.5	13.5	.001
39. Assist patient in walking.	ALL	4	78.4	4	65.0	5	82.3	2	88.5	-17%	-24%	-7%	3.33	15.25	.001
34. Place patient in correct body alignment.	ALL	5	76.9	3	66.4	4	86.2	6	78.6	-20%	-13%	+7%	3.66	8.2	.001
46. Transport patient in wheelchair.	NONE	6	70.1	7	54.0	6	76.9	5	80.2	-23%	-26%	-3%	2.83	20.5	.001
36. Assist patient to dangle.	ALL	7	68.3	6	58.4	7	74.6	7	72.5	-17%	-15%	+2%	3.33	15.25	.01
47. Transport patient on stretcher.	NONE	8	50.8	8	48.2	8	59.2	8	45.0	-11%	+3%	+14%	2.83	20.5	n.s.
40.2 Assist patient in active exercise.	RN,LVN	9	33.2	9	30.7	9	43.8	9	25.2	-13%	+6%	+19%	3.66	8.2	.01
40.1 Assist patient in passive exercixe.	RN,LVN	10	27.1	10	25.5	10	33.8	11	22.1	-8%	+4%	+12%	3.66	8.2	n.s.
40.3 Assist patient in range of motion.	RN,LVN	11	25.1	11	20.4	11	31.5	10	23.7	-12%	-4%	+8%	3.66	8.2	n.s.
42. Set up and maintain traction. Set up: Maintain:	NONE ALL	12	10.1	13	3.6	12	16.2	14	10.7	-12%	-7%	+5%	4.0	1.33	.01
45. Apply and remove braces.	ALL	13	9.5	12	4.4	13	12.3	12	12.2	-8%	-8%	0	3.5	13.5	.05
40.4 Assist patient in preparation for crutch walking.	RN	14	8.5	14	2.9	14	11.5	13	11.5	-9%	-9%	0	3.66	8.2	.05
41. Use mechanical devices (Hoyer lift) to move patient.	ALL	15	5.5	16.5	1.5	17	5.4	15	9.9	-3%	-8%	-5%	3.16	19.0	.05
40.7 Assist patient following radical mastectomy.	ALL	16	5.3	16.5	1.5	16	6.2	16	8.4	-4%	-6%	-2%	4.0	1.33	.05
43. Operate Stryker and Foster Frames.	ALL	17	4.8	15	2.2	15	6.9	17.33	5.3	-5%	-3%	+2%	3.83	4.25	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 12.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-4. Patient Need for Movement

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
40.5 Assist patient in preparation for chest surgery.	RN	18.5	3.3	18.25	0.0	18.5	4.6	17.33	5.3	-5%	-5%	0	3.83	4.25	.05
40.6 Assist patient following amputation.	RN	18.5	3.3	18.25	0.0	18.5	4.6	17.33	5.3	-5%	-5%	0	3.83	4.25	.05
44. Operate circle beds.	ALL	20	2.3	18.25	0.0	20	3.1	20	3.8	-3%	-4%	-1%	4.0	1.33	n.s.
40.8 Assist patient in Buerger's exercise.	ALL	21	0.8	18.25	0.0	21	1.5	21	0.8	-2%	-1%	+1%	3.83	4.25	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.
**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 13. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF SAFETY AND COMFORT: B-4. Patient Need for Movement (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
40.0 Assist patient with therapeutic exercises:															
40.2 Active exercise.	RN,LVN	1	33.2	1	30.7	1	43.8	1	25.2	-13%	+6%	+19%	3.66	5.25	.01
40.1 Passive exercise.	RN,LVN	2	27.1	2	25.5	2	33.8	3	22.1	-8%	+4%	+12%	3.66	5.25	n.s.
40.3 Range of motion.	RN,LVN	3	25.1	3	20.4	3	31.5	2	23.7	-12%	-4%	+8%	3.66	5.25	n.s.
40.4 Preparatory to crutch walking.	RN	4	8.5	4	2.9	4	11.5	4	11.5	-9%	-9%	0	3.66	5.25	.05
40.7 Following radical mastectomy.	ALL	5	5.3	5	1.5	5	6.2	5	8.4	-4%	-6%	-2%	4.0	1.0	.05
40.5 Preparatory to chest surgery.	RN	6.5	3.3	6.33	0.0	6.5	4.6	6.5	5.3	-5%	-5%	0	3.83	2.33	.05
40.6 Following amputations.	RN	6.5	3.3	6.33	0.0	6.5	4.6	6.5	5.3	-5%	-5%	0	3.83	2.33	.05
40.8 Buerger's exercise.	ALL	8	0.8	6.33	0.0	8	1.5	8	0.8	-2%	-1%	+1%	3.83	2.33	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

For the three tasks thought to be in the province of the RN and LVN/LPN, one (No. 40.2) was significantly differentiated ($p \leq 0.01$), with the LVN/LPN being the most frequent performer. The other two (Nos. 40.1, 40.3) were not significantly differentiated, but also displayed a tendency toward performance by the LVN/LPN. Of the two tasks deemed to be nonnursing functions, one (No. 47) was undifferentiated and the other (No. 46) was differentiated toward the LVN/LPN and Aide, with the Aide the most frequent performer ($p \leq 0.001$).

GENERAL REMARKS – Of the 11 tasks above the midmost task, slightly over one-half (6 of 11) fall into category a(1) as defined above. Two of the remaining five tasks are in category a(2); the rest fall into category b(1). It should be noted that six of the eight tasks of category a(2) are at or below the median in terms of frequency of performance by all personnel. That is, the specifically therapeutic activities in this subarea tend to be performed relatively infrequently, i.e., are undertaken "daily" or "almost daily" by one-fourth or less of all personnel. The median criticality scores for the distribution of cases falling at or above the median task is 3.16; cases falling at or below the median task had a median criticality score of 3.60.

This suggests a tendency for the more critical tasks to be less frequently performed, although it must be pointed out that the range of criticality scores for the overall distribution is relatively narrow (a spread of 1.17 points, ranked 13.5 out of 16 areas). Concentration of more critical tasks in the bottom half of the overall distribution of frequency of performance might reflect the fact that six out of eight of the series of activities constituting category a(2) ("Assist patient with therapeutic activities") fall at or below the median of the overall distribution, i.e., the specifically therapeutic tasks discussed above. This series has a median of 3.68, ranging from 3.66 to 4.0 on the criticality scale, making it the most critical set of tasks in this area, in the judgment of the Advisory Committee. Five of these tasks have a frequency performance of 8.5 percent or less.

These findings, while only suggestive at this point, clearly underscore the fact that frequency of performance by itself is not indicative of curricular needs. Often, the most routine and least skilled activities occur most frequently. What is more significant is the pattern of performance by the three nursing occupations.

It is worth noting in this regard that the tasks deemed appropriate to all levels of personnel displayed a consistent pattern of differentiation toward the less skilled categories. More important is that those tasks judged to be the proper responsibility of the RN, or the RN and LVN/LPN, with one exception, were either more frequently performed by the less skilled category or categories, or showed no statistically significant difference in the frequency of performance across categories. This pattern held for all but one of the most critical tasks in the subarea.

One inference that might be drawn is that, in the judgment of authoritative personnel in the hospitals surveyed, it was seen as appropriate that the responsibility for many routine activities be placed on the LVN/LPN and Aide. An equally plausible inference is that this division of labor emerged from ongoing adjustments of work activities in the hospital. An obvious consequence of such an arrangement, however it developed, is the freeing of the RN's time for other duties.

Further, with respect to the finding that LVN/LPNs and Aides were often more frequently performing tasks judged to be the province of the RN or the RN and LVN/LPN, is the conclusion that judgments are being made in the hospitals that less trained persons are capable of carrying

Table 14. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF NUTRITION AND ELIMINATION: C-1. Patient Need for Food and Fluids

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
50.1 Position patient for meals.	ALL	1	78.1	4	62.8	2	85.4	1	87.0	-22%	-24%	-2%	2.33	11.5	.001
54.1 Prepare and give between-meal nourishment of liquids, e.g., water, juice, coffee.	ALL	2	76.9	2.5	65.0	1	86.2	3.5	80.2	-21%	-15%	+6%	2.16	13.5	.001
50.2 Prepare food so patient may assist self.	ALL	3	73.4	6	58.4	4	79.2	2	83.2	-21%	-25%	-4%	2.33	11.5	.001
55. Observe, measure, and record food and fluid intake.	ALL	4	73.1	5	60.6	3	84.6	6	74.8	-24%	-14%	+10%	3.16	7.0	.001
49.3 Collect food trays.	NONE	5	67.6	8	47.4	5	76.2	3.5	80.2	-29%	-33%	-4%	1.16	18.0	.001
49.2 Serve food trays.	NONE	6	66.8	7	49.6	6	75.4	5	76.3	-25%	-26%	-1%	1.83	15.5	.001
54.2 Prepare and give solid foods, e.g., pudding, crackers, toast.	ALL	7	55.8	9	43.8	7	65.4	8	58.8	-21%	-15%	+6%	2.16	13.5	.01
51.3 Feed adult patients.	ALL	8	51.5	12	28.5	8	57.7	7	69.5	-29%	-41%	-12%	2.66	10.0	.001
53.3 Discontinue intravenous fluids.	RN,LVN	9	44.2	2.5	65.0	9	47.7	10.5	19.1	+17%	+46%	+29%	3.0	8.0	.001
53.2 Regulate intravenous fluids.	RN	10	41.7	1	67.2	10	42.3	12.33	14.5	+25%	+52%	+27%	4.16	2.33	.001
48. Ask patient about cultural, religious, personal preferences for food.	NONE	11	35.4	11	35.0	11	39.2	9	32.1	-4%	+3%	+7%	1.83	15.5	n.s.
51.1 Assist infant patients to eat.	ALL	12	16.6	13	11.7	12	19.2	10.5	19.1	-7%	-7%	0	3.33	6.0	n.s.
53.1 Start intravenous fluids.	RN	13	15.1	10	42.3	18	0.0	16.5	1.5	+42%	+40%	-2%	4.83	1.0	.001
49.1 Put food on trays.	NONE	14	13.8	14	10.9	13	16.2	12.33	14.5	-5%	-4%	+1%	1.5	17.0	n.s.
51.2 Feed patient (children).	ALL	15	12.1	16.5	8.0	15	13.8	12.33	14.5	-6%	-7%	-1%	2.83	9.0	n.s.
52.1 Administer nasogastric.	RN,LVN	16	9.3	15	8.8	14	14.6	15	4.6	-6%	+4%	+10%	4.16	2.33	.05
52.2 Administer gavage.	RN,LVN	17	5.0	16.5	8.0	17	5.4	16.5	1.5	+3%	+6%	+3%	4.16	2.33	n.s.
52.3 Administer gastrostomy.	RN,LVN	18	4.8	18	3.6	16	10.0	18	0.8	-6%	+3%	+9%	4.00	5.0	.01

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

out many of these activities. The judgment by the Advisory Committee as to the appropriateness of a given task for one or another category of personnel, and the estimation of criticality of particular tasks, represent the considered opinion of experts. Discrepancies between the expectations of experts and everyday practice in the hospital may signal the need for revision of these practices or a reconsideration of the basis of experts' opinion. Such inferences as the above, and their implications for curriculum development, must be assessed in the light of the examination of all the functional areas.

3. Nutrition and Elimination

PATIENT NEED FOR FOOD AND FLUIDS

DESCRIPTION OF THE AREA – The 18 tasks comprising this nursing area can be classified into two categories: (a) "Activity involving normal mouth feeding" (Nos. 48, 49.1-3, 50.1-2, 51.1-3, 54.1-2, 55); and (b) "Activity involving special feedings," (1) Intravenous (Nos. 51.1-3), and (2) Other (Nos. 52.1-3). The first category covers the work of serving and collecting food trays, preparing between-meal nourishment, hand-feeding patients, and measuring intake. The second category includes intravenous feeding and such tasks as administering a gavage (see tables 14 and 15).

The most frequently occurring task is No. 50.1, "Position patient for meals" (78.1 percent, all personnel); the least frequent is No. 52.3, "Administer gastrostomy" (4.8 percent, all personnel). The range of frequency of task performance is 73.3 percent, fifth highest of the several areas. The midmost task is located between No. 53.3, "Discontinue intravenous feedings," (44.2 percent, all personnel), and No. 53.2, "Regulate intravenous fluids" (41.7 percent, all personnel). The frequency of the median task is 43.9 percent, also ranked fifth overall. In terms of criticality, the median score was 2.84 (close to "average" criticality) with a range of 1.16 (No. 49.3, "Collect food trays") to 4.83 (No. 53.1, "Start intravenous fluids"). It should be noted that the spread of criticality scores in this subarea is the widest of any area. The median criticality score ranked 10.5 out of 16.

Considering the median criticality scores for tasks falling above and below the midmost task point, the most critical tasks again tend to be the least frequently performed. Frequency of performance for all personnel ranges from 78.1 to 44.2 percent above the midmost task, and 41.7 to 4.8 percent below that point. The median criticality score for the former is 2.19 ("moderate" criticality) and 3.76 (approaching "above average" criticality) for the latter. Five of the eight tasks below the midmost task point are performed with the frequency of 15.1 percent or less by all personnel.

Nine of the 18 tasks in this area were judged to be appropriate to all personnel (Nos. 49.3, 50.1-2, 54.1-2, 55); four were deemed the responsibility of the RN and LVN/LPN (Nos. 52.1-3 and 53.3); two were thought to be the province of the RN (Nos. 53.1-2); and three tasks were designated as nonnursing functions (Nos. 49.1-2 and 48). Seven of the nine tasks judged appropriate to all personnel displayed the familiar pattern of differentiation toward the lower skill levels (significant at the 0.01 level or less), three being performed most frequently by the LVN/LPN (Nos. 51.3, 54.1, and 55), and two by the Aide (Nos. 49.3 and 51.3); the remaining two of the differentiated tasks shared roughly equal frequency of performance by the LVN/LPN and Aide (Nos. 50.1-2). Two tasks (Nos. 51.1-2) conformed in practice to the expectations of the Advisory Committee. It may

Table 15. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF NUTRITION AND ELIMINATION: C-1. Patient Need for Food and Fluids (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
49.0 Serve food to patients:															
49.3 Collect trays.	NONE	1	67.6	2	47.4	1	76.2	1	80.2	-29%	-33%	-4%	1.16	3.0	.001
49.2 Serve trays.	NONE	2	66.8	1	49.6	2	75.4	2	76.3	-25%	-26%	-1%	1.83	1.0	.001
49.1 Put food on trays.	NONE	3	13.8	3	10.9	3	16.2	3	14.5	-5%	-4%	+1%	1.5	2.0	n.s.
50.0 Assist patient to eat:															
50.1 Position patient for meals.	ALL	1	78.1	1	62.8	1	85.4	1	87.0	-22%	-24%	-2%	2.33	1.5	.001
50.2 Prepare food so patient may assist self.	ALL	2	73.4	2	58.4	2	79.2	2	83.2	-21%	-25%	-4%	2.33	1.5	.001
51.0 Feed patient:															
51.3 Adults.	ALL	1	51.5	1	28.5	1	57.7	1	69.5	-29%	-41%	-12%	2.66	3.0	.001
51.1 Infants.	ALL	2	16.6	2	11.7	2	19.2	2	19.1	-7%	-7%	0	3.33	1.0	n.s.
51.2 Children.	ALL	3	12.1	3	8.0	3	13.8	3	14.5	-6%	-7%	-1%	2.83	2.0	n.s.
52.0 Administer tube feedings:															
52.1 Nasogastric	RN,LVN	1	9.3	1	8.8	1	14.6	1	4.6	-6%	+4%	+10%	4.16	1.5	.05
52.2 Gavage.	RN,LVN	2	5.0	2	8.0	3	5.4	2	1.5	+3%	+6%	+3%	4.16	1.5	n.s.
52.3 Gastrostomy.	RN,LVN	3	4.8	3	3.6	2	10.0	3	0.8	-6%	+3%	+9%	4.0	3.0	.01
53.0 Administer intravenous fluids:															
53.3 Discontinue intravenous fluids.	RN,LVN	1	44.2	2	65.0	1	47.7	1	19.1	+17%	+46%	+29%	3.0	3.0	.001
53.2 Regulate intravenous fluids.	RN	2	41.7	1	67.2	2	42.3	2	14.5	+25%	+52%	+27%	4.16	2.0	.001
53.1 Start intravenous fluids.	RN	3	15.1	3	42.3	3	0.0	3	1.5	+42%	+40%	-2%	4.83	1.0	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 15. (Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF NUTRITION AND ELIMINATION: C-1. Patient Need for Food and Fluids (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
54.0 Prepare and give between-meal nourishment:															
54.1 Liquids, e.g., water, juice, coffee.	ALL	1	76.9	1	65.0	1	86.2	1	80.2	-21%	-15%	+6%	2.16	1.5	.001
54.2 Solid foods, e.g., pudding, crackers, toast.	ALL	2	55.8	2	43.8	2	65.4	2	58.8	-21%	-15%	+6%	2.16	1.5	.01

---

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

be noted that these nine cases had a median criticality score of 2.36 (slightly more than "moderate" criticality).

With respect to the four tasks deemed appropriate to the RN and LVN/LPN, No. 53.3 conformed to the judgment of the Advisory Committee in actual practice ($p \leq 0.001$), No. 52.2 displayed no differentiation, and the remaining two, Nos. 52.1 and 52.3, were most frequently performed by the LVN/LPN ($p \leq 0.05$ and 0.01, respectively). The median criticality score for these four tasks was 3.76. Each of the two tasks seen as the responsibility of the RN was most frequently performed by personnel in this category ($p \leq 0.001$). Task No. 53.1, "Start intravenous fluids," was, in fact, all but exclusively performed by the RN, with 1.5 percent of the Aides reporting participation on a frequent basis. The criticality scores for the two tasks were 4.16 for No. 53.2 and 4.83 for No. 53.1. Two of the three tasks considered not to be nursing functions were not differentiated (Nos. 48, 49.1), and the remaining task (No. 49.2) was differentiated toward the LVN/LPN and Aide. All three tasks were rated low in criticality.

GENERAL REMARKS – The relatively high range of frequency of performance, the highest range of criticality scores, the fairly low median criticality, and the variation of criticality above and below the median of the distribution of frequency of performance require comment. What appears to be operating is the heterogeneity of the tasks grouped under this subarea. That is, relatively routine and unspecialized activities are included with quite specialized and infrequent tasks, resulting in the characteristics summarized above. For example, the tasks positioned above the median of the distribution of frequency of performance for this area include such activities as preparing and giving between-meal nourishment, collecting food trays, and preparing and giving solid foods. Tasks below the median include starting and regulating intravenous fluids and administering gavages, nasogastrics and gastrostomy. Hence, there are obvious differences in the skills required for the competent performance of one set of tasks as opposed to another set.

In terms of curriculum development, the routine of feeding patients is far less important than the pattern of task performance for the rather critical tasks involving administration and regulation of intravenous fluids and other procedures involving the introduction of fluids into the body in other ways than the normal process of eating and drinking. For example, No. 53.2, "Regulate intravenous fluids," while performed most frequently by the RN (in accordance with the judgment of the Advisory Committee), is also performed with significant frequency by the LVN/LPN and, although much less frequently, by the Aide. That 14.5 percent of the Aides do report performing this task frequently suggests that some consideration needs to be given to the training requirements of this least skilled occupational group. In the concluding chapter of this report, means of specifying the conditions under which less skilled personnel should receive more specialized training will be discussed. It will be pointed out that certain types of facilities may possibly place greater responsibility on occupations below the level of the RN, and if this is so, it poses a challenge to curriculum planners. In any event, the finding that less skilled occupations are called upon to perform tasks beyond the scope of their formally specified competence requires close scrutiny.

PATIENT NEED FOR ELIMINATION

DESCRIPTION OF THE AREA – Six tasks comprise this nursing area of Functional Area C. Four of the six make up the Task Series 51.1-4, "Assist patient in elimination procedures." The remaining two tasks (Nos. 57, 58) involve "Other elimination procedures."

In terms of frequency of occurrence, No. 56.1, "Assist patient in using bedpan," is first (83.4 percent, all personnel); No. 57, "Remove . . . impactions," is last (8.0 percent, all personnel). (See tables 16 and 17.) This area ranks fourth among the 16 areas with a range of frequency of performance of 75.4 percent. It should be noted that five of the six tasks are above 50 percent in terms of frequency of performance by all personnel. The midmost task point falls between No. 58 ("Observe, measure and record output," 77.6 percent, all personnel) and No. 56.2 ("Assist the patient in using urinal," 62.1 percent, all personnel). The median task frequency in this case is 69.3 percent, second highest overall. Task No. 57, "Remove fecal impactions," was the most critical task (3.33); Nos. 56.1 and 56.2 ("Assist patient in using bedpan" and ". . . in going to bathroom") were the least critical, sharing scores of 2.33. The median criticality score was 2.84, ranking 10.5 overall. Task No. 57 was the least frequently performed activity in the subarea.

Five of the six tasks were deemed by the Advisory Committee to be appropriate to all nursing personnel; task No. 57 was thought to be the responsibility of the RN and LVN/LPN. All tasks were significantly differentiated in practice; the LVN/LPN and Aide were the more frequent performers. Routine attention to the elimination needs of patients, including the removal of fecal impactions, is apparently the main responsibility of the LVN/LPN and Aide.

GENERAL REMARKS – The tasks in this area, taken together, were performed relatively frequently. Criticality (assessed in terms of median criticality score) was relatively low. The majority of tasks were deemed to be appropriate to all personnel, yet in practice, the division of labor was fairly well defined, the LVN/LPN and the Aide predominating in terms of frequency of performance. The implications of this type of pattern will be discussed in the concluding section of this report.

PATIENT NEED FOR OXYGEN TRANSPORT AND EXCHANGE

DESCRIPTION OF THE AREA – The 18 tasks organized around "Patient Need for Oxygen Transport and Exchange" are, by and large, the most specialized activities that have been encountered in this report at this point. They may be classified as follows: (a) eight tasks involve the administration of oxygen to the patient (Nos. 61, 62.1-4, 63, 66, 67); (b) two tasks require rendering assistance to the patient in oxygen procedures (Nos. 59, 60); (c) five tasks involve clearing the patient's oxygen passages (Nos. 64.1-3, 65.1-2); (d) three tasks require administering blood (Nos. 68.1-3).

The most frequently occurring task is No. 59, "Assist the patient to turn, cough, deep breathe" (60.8 percent, all personnel). (See tables 18 and 19.) The least frequent is No. 61, "Give artificial respiration" (0.5 percent, all personnel). The range of frequency of performance is 60.3 percent, ranked ninth of 16. The median task in terms of frequency of performance falls between No. 67, "Set up and regulate humidifier" (9.5 percent, all personnel), and No. 62.5, "Administer oxygen, positive pressure" (9.3 percent, all personnel). The frequency of the median task is 9.4 percent,

Table 16. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF NUTRITION AND ELIMINATION: C-2. **Patient Need for Elimination**

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
56.1 Assist patient in using bedpan.	ALL	1	83.4	1	68.6	1	88.5	1.5	93.9	+20%	-25%	-5%	2.33	5.5	.001
56.4 Assist patient in going to bathroom.	ALL	2	80.9	2	62.0	2	87.7	1.5	93.9	-26%	-32%	-6%	2.66	3.5	.001
58. Observe, measure, and record output.	ALL	3	77.6	3	61.3	3	86.9	3	85.5	-26%	-25%	+1%	2.83	2.0	.001
56.2 Assist patient in using urinal.	ALL	4	62.1	4	46.7	4	69.2	4	71.0	-22%	-24%	-2%	2.33	5.5	.001
56.3 Assist patient in using bedside commode.	ALL	5	51.0	5	32.1	5	56.2	5	65.6	-24%	-34%	-10%	2.66	3.5	.001
57. Remove fecal impactions.	RN,LVN	6	8.0	6	2.9	6	8.5	6	13.0	-6%	-10%	-4%	3.33	1.0	.05

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 17. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF NUTRITION AND ELIMINATION: C-2. Patient Need for Elimination (Sub-tasks)

Task	Level	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
56. Assist patient in eliminating urine and solid wastes:															
56.1 Assist patient in using bedpan.	ALL	1	83.4	1	68.6	1	88.5	1.5	93.9	+20%	-25%	-5%	2.33	3.5	.001
56.4 Assist patient in going to bathroom.	ALL	2	80.9	2	62.0	2	87.7	1.5	93.9	-26%	-32%	-6%	2.66	1.5	.001
56.2 Assist patient in using urinal.	ALL	3	62.1	3	46.7	3	69.2	3	71.0	-22%	-24%	-2%	2.33	3.5	.001
56.3 Assist patient in using bedside commode.	ALL	4	51.0	4	32.1	4	56.2	4	65.6	-24%	-34%	-10%	2.66	1.5	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 18. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF NUTRITION AND ELIMINATION: C-3. Patient Need for Oxygen Transport and Exchange

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		$\underline{p}$**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
59. Assist patient to turn, cough, deep breathe.	ALL	1	60.8	1	58.4	1	68.5	1	55.7	-11%	+2%	+13%	3.16	17.5	n.s.
62.2 Administer oxygen mask.	RN,LVN	2	22.4	6	19.7	2	27.7	2	19.8	-8%	0	+8%	3.5	12.2	n.s.
62.1 Administer oxygen catheter.	RN,LVN	3	20.6	7	19.0	3	26.2	3	16.8	-7%	+2%	+9%	3.83	8.0	n.s.
63. Set up and regulate oxygen equipment.	RN	4	18.1	8	18.2	5	20.0	4	16.0	-2%	+2%	+4%	3.5	12.2	n.s.
64.2 Suction patient's throat passage.	RN,LVN	5	16.8	4.5	21.2	4	21.5	7.5	7.6	-1%	-13%	+14%	3.66	9.33	.01
64.1 Suction patient's nose passage.	RN,LVN	6	15.1	4.5	21.2	6	16.2	7.5	7.6	+5%	+13%	+8%	3.5	12.2	.01
68.3 Discontinue blood transfusion.	RN,LVN	7	13.1	2	24.1	10.5	10.8	13.33	3.8	+13%	+20%	+7%	3.16	17.5	.001
68.2 Regulate blood transfusion.	RN,LVN	8	11.3	3	21.9	12	9.2	16	2.3	+13%	+20%	+7%	4.16	4.33	.001
67. Set up and regulate humidifier.	ALL	9	9.5	12	7.3	9	11.5	5	9.9	-5%	-3%	+2%	3.5	12.2	n.s.
62.4 Administer oxygen: positive pressure.	RN,LVN	10	9.3	11	10.9	8	13.1	13.33	3.8	-2%	+7%	+9%	4.0	7.0	.05
60. Assist patient with postural drainage.	RN,LVN	11	9.0	13	4.4	7	13.8	6	9.2	-10%	-5%	+5%	3.66	9.33	.05
64.3 Suction patient's trachea.	RN	12	8.8	10	11.7	13.5	8.5	11	6.1	+3%	+6%	+3%	4.33	3.0	n.s.
65.1 Suction patient's tracheotomy.	RN,LVN	13	7.0	14	3.6	10.5	10.8	9.5	6.9	-4%	-3%	+4%	4.16	4.33	n.s.
65.2 Remove and clean inner cannula of trachea.	RN,LVN	14	5.5	15.5	2.9	13.5	8.5	12	5.3	-6%	-2%	+4%	4.16	4.33	n.s.
66. Set up and regulate croupette.	RN,LVN	15	5.0	17	1.5	15	6.9	9.5	6.9	-5%	-5%	0	3.5	12.2	n.s.
68.1 Start blood transfusion.	RN	16	4.5	9	13.1	17.5	0.0	18	0.0	+13%	+13%	0	4.83	1.0	.001
62.3 Administer oxygen tent.	RN,LVN	17	4.3	15.5	2.9	16	6.2	13.33	3.8	-3%	-1%	+2%	3.66	9.33	n.s.
61. Give artificial respiration.	ALL	18	0.5	18	0.7	17.5	0.0	17	0.8	+1%	0	-1%	4.66	2.0	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.
**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates $\underline{p}$ value greater than .05.

next to the bottom of the distribution of median task frequency for the 16 areas covered by the task survey.

The specialized character of tasks in this subarea is reflected in the distribution of criticality scores, which range from 4.83 (No. 68.1, "Start blood transfusion") to 3.16 (No. 59, "Assist patient to turn, cough, deep breathe"; No. 68.3, "Discontinue blood transfusion"), or from "highly critical" to "average" on the criticality scale. The median criticality score was 3.71, close to "above average" criticality. Area C-3 ranked second in the overall distribution of median criticality scores.

It is worth noting that the median criticality score for tasks above the median for the overall frequency distribution of tasks was 3.38; the median criticality score for those tasks below the median tasks was 4.09. Again, this points to the tendency for the more critical tasks to be performed less frequently. It has already been pointed out that, on the whole, almost all of the tasks in this area were performed relatively infrequently, making the contrast in criticality between the two halves of the distribution of tasks even more striking.

Only three of the 18 tasks in this subarea were thought by the Advisory Committee to be appropriate to all personnel (Nos. 59, 61, 67). Three were deemed the responsibility of the RN alone (Nos. 63, 64.3, 68.1). The remaining 12 were assigned by the Advisory Committee to the RN and the LVN/LPN jointly (Nos. 60, 62.1-4, 64.1-2, 65.1-2, 66, 68.2-3).

Of the three tasks appropriate to all personnel, two (Nos. 61 and 67) were clearly undifferentiated. (It should be noted that task No. 61 was infrequently performed.) Task No. 59 showed a slight tendency to more frequent performance by the LVN/LPN. None of the differences in frequency of performance between the RN, LVN/LPN and Aide were statistically significant.

One of the three tasks that were judged to be the sole province of the RN was, in fact, exclusively performed by the RN – task No. 68.1, "Start blood transfusion." This task, incidentally, was accorded the highest criticality score (4.83) of any in this subarea. However, task No. 63 ("Set up and regulate oxygen equipment") and No. 64.3 ("Suction patient's trachea") showed no statistically significant difference in frequency of performance between categories of personnel. The former had a criticality of 3.5, which ranked 12.2 out of 18; the latter was assigned a score of 4.33, third highest in criticality.

For the 12 tasks judged to be the joint domain of the RN and LVN/LPN, three tasks were actually differentiated this way in practice (Nos. 62.4, 64.1-2). These tasks were scored 4.0, 3.5, and 3.66 in criticality, respectively. Two tasks, Nos. 68.2-3, were performed most frequently by the RN; No. 68.2 ("Regulate blood transfusion") had a criticality score of 2.16; and No. 68.3 ("Discontinue blood transfusion") had a criticality score of 3.16. The other task in this series (No. 68.1, "Start blood transfusion") was exclusively performed by the RN.

Six of the 12 tasks showed no significant differences in frequency performance by category of personnel (Nos. 62.1-3, 65.1-2, 66), although for all except No. 62.3, there was a tendency for the LVN/LPN to be the most frequent performer. These six tasks range from 3.5 to 4.6 in terms of criticality.

Table 19. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF NUTRITION AND ELIMINATION: C-3. Patient Need for Oxygen Transport and Exchange (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
62.0 Administer oxygen:															
62.2 Mask.	RN,LVN	1	22.4	1	19.7	1	27.7	1	19.8	-8%	0	+8%	3.5	4.0	n.s.
62.1 Catheter.	RN,LVN	2	20.6	2	19.0	2	26.2	2	16.8	-7%	+2%	+9%	3.83	2.0	n.s.
62.4 Postive pressure.	RN,LVN	3	9.3	3	10.9	3	13.1	3.5	3.8	-2%	+7%	+9%	4.0	1.0	.05
62.3 Tent.	RN,LVN	4	4.3	4	2.9	4	6.2	3.5	3.8	-3%	-1%	+2%	3.66	3.0	n.s.
64.0 Suction patient's respiratory passages:															
64.2 Throat.	RN,LVN	1	16.8	1.5	21.2	1	21.5	1.5	7.6	-1%	+13%	+14%	3.66	2.0	.01
64.1 Nose.	RN,LVN	2	15.1	1.5	21.2	2	16.2	1.5	7.6	+5%	+13%	+8%	3.5	3.0	.01
64.3 Trachea.	RN	3	8.8	3	11.7	3	8.5	3	6.1	+3%	+6%	+3%	4.33	1.0	n.s.
65.0 Care for patient's tracheotomy:															
65.1 Suction patient's tracheotomy.	RN,LVN	1	7.0	1	3.6	1	10.8	1	6.9	-4%	-3%	+4%	4.16	1.5	n.s.
65.2 Remove and clean inner cannula of tracheotomy.	RN,LVN	2	5.5	2	2.9	2	8.5	2	5.3	-6%	-2%	+4%	4.16	1.5	n.s.
68.0 Administer blood transfusions:															
68.3 Discontinue blood transfusion.	RN,LVN	1	13.1	1	24.1	1	10.8	1	3.8	+13%	+20%	+7%	3.16	3.0	.001
68.2 Regulate blood transfusion.	RN,LVN	2	11.3	2	21.9	2	9.2	2	2.3	+13%	+20%	+7%	4.16	2.0	.001
68.1 Start blood transfusion.	RN	3	4.5	3	13.1	3	0.0	3	0.0	+13%	+13%	0	4.83	1.0	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

The remaining task, No. 66 ("Set up and regulate croupette"), was significantly differentiated toward more frequent performance by the LVN/LPN and Aide ($p \leq 0.05$). This task had a criticality score of 3.5.

GENERAL REMARKS – It should be pointed out, to begin with, that apart from task No. 59, all other tasks are performed relatively infrequently. Second most frequent task, No. 62.2, is reported by 22.4 percent of all personnel as performed "daily" or "almost daily." Obviously, the performance of rather specialized tasks, such as those involving the administration of oxygen and blood, is a function of the demand exerted by the patient's condition and the medical and surgical treatment of that condition. Hence, overall frequency in the performance of specialized tasks is bound to be low, relative to the more routine duties which must be performed for all patients every day.

Of direct interest to curriculum formation, eight tasks thought to be the responsibility of the RN and LVN/LPN were, by and large, performed with roughly equivalent frequency by all three nursing occupations. For example, there were no statistically significant differences in frequency of performance by category of personnel for such tasks as administering oxygen catheters, suctioning the patient's trachea or tracheotomy or administering oxygen tents. The same tentative conclusions may be drawn here as were drawn in the discussion of C-1; for some specialized tasks, less skilled categories (such as the Aide) share these duties in roughly equal amounts with the higher skilled categories. Hence, whatever formal definition may exist of the responsibilities of these occupations, in practice the professional boundaries between RNs, LVN/LPNs and Aides are permeable, at least for some tasks. To the extent that further analysis can establish this fact, curricula oriented toward serving the actual needs of personnel in hospital settings may have to be shaped accordingly.

4. Treatments, Procedures, Medications and Diagnostic Activities

TREATMENTS AND PROCEDURES

DESCRIPTION OF THE AREA – The 31 tasks of the "Treatment and Procedures" nursing area of Functional Area D may be classified into five categories: (a) "Drainage and irrigation" (Nos. 69.1-7, 71-76); (b) "Assist and apply bandages" (Nos. 78.1-5, 79); (c) "Assist in rectal, vaginal or proctoscopic procedures" (Nos. 71.1-5); (d) Instill solutions" (Nos. 70.1-5); and (e) "Assist with somatic therapies" (Nos. 80, 81).

Task No. 74 ("Empty drainage bottles and bags") is the most frequently occurring task (62.1 percent, all personnel), and task No. 81 ("Apply defibrillator") is the least frequent (0.5 percent, all personnel). (See tables 20 and 21.) The range of frequency is 61.6 percent, ranked 8 out of 16. The midmost task is No. 78.4, "Assist with and/or apply roller bandages" (16.1 percent, all personnel), which ranks 13th in the distribution of median task frequency. This reflects the fact that in terms of frequency of performance, the gradient is rather sharp. For tasks at or below the midmost task, the range is 16.1 to 0.5 percent; that is, one-half of the tasks in the subarea are reported by less than 17 percent of personnel to be performed "daily" or "almost daily." As was noted for Area C-3, specialized tasks represented here are tied to the demands of the patients' conditions, and hence are less frequent than routine activities performed for any patient.

Table 20. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-1. Treatments and Procedures

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
74. Empty drainage bottles and bags.	ALL	1	62.1	4	40.1	1	73.1	1	74.0	-33%	-34%	-1%	2.66	23.0	.001
72. Check and maintain drainage tubing without suction, e.g., urinary, catheters, T-tube.	ALL	2	57.5	1	53.3	2	70.8	3	48.9	-18%	+4%	+22%	3.33	10.25	.001
71. Connect catheters and tubing to drainage.	RN,LVN	3	53.3	2	47.4	3	65.4	4	47.3	-18%	0	+18%	3.16	14.16	.01
77.5 Care for specimens.	ALL	4	44.7	6.5	35.8	4	56.9	6	42.0	-21%	-6%	+15%	2.33	25.0	.01
69.3 Irrigate rectum (enema).	ALL	5	42.0	13	24.1	5	53.1	2	49.6	-29%	-26%	+3%	2.16	26.16	.001
78.3 Assist with and/or apply ace bandages and elastic stockings.	ALL	6	40.2	10	29.2	6	47.7	5	44.3	-19%	-15%	+4%	3.0	20.0	.01
77.2 Position and hold patient for rectal, vaginal, or proctoscopic.	RN,LVN	7	32.4	6.5	35.8	8	36.9	7	24.4	-1%	+12%	+13%	2.16	26.16	n.s.
77.3 Set up equipment for rectal, vaginal, or proctoscopic.	RN,LVN	8	30.7	5	38.7	10	35.4	11.5	17.6	+4%	+21%	+17%	2.5	24.0	.001
77.1 Screen and drape patient for rectal, vaginal, or proctoscopic.	RN,LVN	9	29.6	8	32.8	11.5	32.3	8	23.7	+1%	+9%	+8%	2.16	26.16	n.s.
77.4 Assist physician with equipment for rectal, vaginal, proctoscopic.	RN,LVN	10	29.4	3	41.6	11.5	32.3	14.5	13.7	+10%	+28%	+18%	2.16	26.16	.001
73. Check and maintain drainage tubing with suction, e.g., chest, gastric.	RN,LVN	11	25.4	11	27.7	14	26.9	10	21.4	+1%	+7%	+6%	3.83	6.0	n.s.
75. Insert urinary catheters.	RN,LVN	12.5	23.4	12	26.3	9	36.2	17.5	7.6	-10%	+18%	+28%	4.0	5.0	.001
78.2 Assist with and/or apply T, straight, scultetus, breast, and triangular (sling) binders.	ALL	12.5	23.4	14	19.0	13	29.2	9	22.1	-10%	-3%	+7%	2.83	21.5	n.s.
69.4 Irrigate bladder.	RN,LVN	14	23.1	15.5	16.8	7	39.2	14.5	13.7	-22%	+3%	+25%	3.33	10.25	.001
70.1 Instill solutions into eye, ear, nose.	RN,LVN	15	18.8	9	29.9	15	22.3	24.5	3.8	+8%	+26%	+18%	3.16	14.16	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 20. (Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-1. Treatments and Procedures

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
78.4 Assist with and/or apply roller bandages.	ALL	16	16.1	17	10.9	16	20.8	13	16.8	-10%	-6%	+4%	2.83	21.5	n.s.
78.1 Assist with and/or apply rib belts.	ALL	17	11.3	27	3.6	20	13.1	11.5	17.6	-9%	-14%	-5%	**3.16	14.16	.01
70.3 Instill solutions into bladder.	RN,LVN	18.5	10.8	18	10.2	18.5	15.4	19	6.9	-5%	+3%	+8%	3.16	14.16	n.s.
69.7 Irrigate wound.	RN,LVN	18.5	10.8	21	6.6	17	20.0	20.5	6.1	-13%	+1%	+14%	X3.5	8.5	.001
70.5 Instill solutions into wound.	RN,LVN	20	9.9	19.5	7.3	18.5	15.4	20.5	6.1	-8%	+1%	+9%	*3.33	10.25	.05
69.2 Vaginal (douche)	RN,LVN	21	8.3	28	2.9	21	11.5	16	10.7	-9%	-8%	+1%	*2.16	26.16	.05
69.1 Irrigate eye, ear, throat.	RN,LVN	22	7.3	22.5	5.8	22.5	10.8	22.5	5.3	-5%	+1%	+6%	2.16	26.16	n.s.
79. Apply tourniquet.	RN,LVN	23	7.0	15.5	16.8	29	0.8	26.33	3.1	+16%	+13%	-2%	X4.16	4.0	.001
70.2 Instill solutions into vagina.	RN,LVN	24	6.8	26	4.4	22.5	10.8	22.5	5.3	-7%	-1%	+6%	3.16	14.16	n.s.
69.5 Irrigate colostomy.	RN,LVN	25	5.5	29.5	0.7	24	8.5	17.5	7.6	-8%	-7%	+1%	**3.66	7.0	.01
69.6 Irrigate stomach.	RN,LVN	26.5	4.8	22.5	5.8	25	5.4	26.33	3.1	+1%	+3%	+2%	3.5	8.5	n.s.
70.4 Instill solutions into stomach.	RN,LVN	26.5	4.8	19.5	7.3	27	3.8	26.33	3.1	+3%	+4%	+1%	3.33	10.25	n.s.
78.5 Assist with and/or apply splints.	ALL	28	3.8	24.5	5.1	28	2.3	24.5	3.8	+3%	+1%	-2%	3.16	14.16	n.s.
80. Assist with somatic therapies, e.g., insulin shock treatments, electroconvulsive treatments.	RN,LVN	29	2.0	29.5	0.7	26	4.6	30	0.8	-4%	0	+4%	*4.33	3.0	.05
76. Insert nasogastric catheters.	RN	30	1.8	24.5	5.1	30.5	0.0	31	0.0	+5%	+5%	0	**4.5	2.0	.01
81. Apply defibrillator.	NONE	31	0.5	31	0.0	30.5	0.0	29	1.5	0	-2%	-2%	4.83	1.0	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 21. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-1. Treatments and Procedures (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
69.0 Irrigate natural and artificial body openings and tubings:															
69.3 Rectum (enema).	ALL	1	42.0	1	24.1	1	53.1	1	49.6	-29%	-26%	+3%	2.16	5.33	.001
69.4 Bladder.	RN,LVN	2	23.1	2	16.8	2	39.2	2	13.7	-22%	+3%	+25%	3.33	4.0	.001
69.7 Wound.	RN,LVN	3	10.8	3	6.6	3	20.0	5	6.1	-13%	+1%	+14%	3.5	2.5	.001
69.2 Vagina (douche).	RN,LVN	4	8.3	6	2.9	4	11.5	3	10.7	-9%	-8%	+1%	2.16	5.33	.05
69.1 Eye, ear, throat.	RN,LVN	5	7.3	4.5	5.8	5	10.8	6	5.3	-5%	+1%	+6%	2.16	5.33	n.s.
69.5 Colostomy.	RN,LVN	6	5.5	7	0.7	6	8.5	4	7.6	-8%	-7%	+1%	3.66	1.0	.01
69.6 Stomach.	RN,LVN	7	4.8	4.5	5.8	7	5.4	7	3.1	+1%	+3%	+2%	3.5	2.5	n.s.
70.0 Instill solutions into natural and artificial body openings and tubings:															
70.1 Eye, ear, nose drops.	RN,LVN	1	18.8	1	29.9	1	22.3	4	3.8	+8%	+26%	+18%	3.16	3.33	.001
70.3 Bladder.	RN,LVN	2	10.8	2	10.2	2.5	15.4	1	6.9	-5%	+3%	+8%	3.16	3.33	.001
70.5 Wound.	RN,LVN	3	9.5	3.5	7.3	2.5	15.4	2	6.1	-8%	+1%	+9%	3.33	1.5	.05
70.2 Vagina.	RN,LVN	4	6.8	5	4.4	4	10.8	3	5.3	-7%	-1%	+6%	3.16	3.33	.001
70.4 Stomach.	RN,LVN	5	4.8	3.5	7.3	5	3.8	5	3.1	+3%	+4%	+1%	3.33	1.5	.001
77.0 Assist with medical procedures (rectal, vaginal, proctoscopic):															
77.5 Care for specimens.	ALL	1	44.7	3.5	35.8	1	56.9	1	42.0	-21%	-6%	+15%	2.33	2.0	.01
77.2 Position and hold patient.	RN,LVN	2	32.4	3.5	35.8	2	36.9	2	24.4	-1%	+12%	+13%	2.16	3.33	n.s.
77.3 Set up equipment.	RN,LVN	3	30.7	2	38.7	3	35.4	4	17.6	+4%	+21%	+17%	2.5	1.0	.001
77.1 Screen and drape patient.	RN,LVN	4	29.6	5	32.8	4.5	32.3	3	23.7	+1%	+9%	+8%	2.16	3.33	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 21.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-1. Treatments and Procedures (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
77.4 Assist physician with equipment.	RN,LVN	5	29.4	1	41.6	4.5	32.3	5	13.7	+10%	+28%	+18%	2.16	3.33	.001
78.0 Assist with and/or apply non-sterile dressings, binders and bandages:															
78.3 Ace bandages, and elastic stockings.	ALL	1	40.2	1	29.2	1	47.7	1	44.3	-19%	-15%	+4%	3.0	3.0	n.s.
78.2 T, straight, scultetus, breast, and triangular (sling).	ALL	2	23.4	2	19.0	2	29.2	2	22.1	-10%	-3%	+7%	2.83	4.5	n.s.
78.4 Roller bandages.	ALL	3	16.1	3	10.9	3	20.8	4	16.8	-10%	-6%	+4%	2.83	4.5	n.s.
78.1 Rib belts.	ALL	4	11.3	5	3.6	4	13.1	3	17.6	-9%	-14%	-5%	3.16	1.5	.01
78.5 Splints.	ALL	5	3.8	4	5.1	5	2.3	5	3.8	+3%	+1%	-2%	3.16	1.5	n.s.

---

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

The criticality of tasks in this subarea is roughly equivalent to those in C-3. The most critical task was No. 81, "Apply defibrillator," to which score 4.83 (close to "highly critical") was assigned. The least critical tasks were Nos. 69.1-3, 77.1-2, and 77.4, all of which were scored 2.16 (approximately "moderate" criticality). The median criticality score for the 31 tasks was 3.16 ("average"), ranked seventh overall.

When the 31 tasks are dichotomized into distributions above and below the midmost task (including in each the midmost task itself), a familiar pattern emerges. The median criticality score for the 16 tasks at or above the midmost task is 2.68. These tasks range from 62.1 to 16.1 percent in terms of frequency of performance. For tasks at or below the midmost task, the median criticality score is 3.32. These tasks range from 16.1 to 0.5 percent in terms of frequency of performance. Again, the least frequently performed task tended to be the one rated the most critical by the Advisory Committee. This pattern is even more pronounced when the top eight, the middle 15, and the bottom eight tasks, in terms of frequency, are considered. The criticality scores for these groupings are, respectively, 2.76, 3.14, and 3.76.

Similar to C-3, a large number of tasks in this subarea were viewed by the Advisory Committee as appropriately differentiated. Twenty tasks were designated as the proper responsibility of the RN and LVN/LPN jointly (Nos. 69.1-2, 69.4-7, 70.1-5, 71, 73, 75, 77.1-4, 79 and 80). Nine tasks were deemed appropriate to all personnel (Nos. 69.3, 72, 74, 77.5, 78.1-5); one task, No. 76, was seen to be the province of the RN; one task, No. 81 ("Apply defibrillator"), was not thought to be a nursing function.

Considering the tasks deemed to be the responsibility of all personnel, three of the nine were undifferentiated in practice. One of these three (No. 78.5) was performed in roughly equal frequency by all categories, although in general it was not performed often (3.8 percent, all personnel). The remaining two tasks (Nos. 78.2 and 78.4), while displaying no statistically significant differences by category of personnel, tended to be performed more frequently by LVN/LPNs and Aides. They were somewhat more frequently performed in general (23.4 and 16.4 percent, respectively, all personnel) than was task No. 78.5. The other six tasks of this group were all significantly differentiated at the 0.01 level or beyond. The pattern is for more frequent performance by LVN/LPNs and Aides versus the RN, with the exception of task No. 72 ("Check and maintain drainage tubing without suction . . ."), which was predominantly performed by the LVN/LPN. As has been generally found to be the case in the other functional areas and subareas, tasks which are viewed by the Advisory Committee to be the appropriate function of all personnel tend nonetheless to show differentiation, usually in the direction of performance by the LVN/LPN and the Aide.

The one task (No. 76, "Insert nasogastric catheters") thought to be the exclusive function of the RN was, in fact, performed only by her. The task that was not deemed to be a nursing function at all (No. 81, "Apply defibrillator") ranked last in frequency of performance (0.5 percent, all personnel), and was reportedly performed frequently by 1.5 percent of the Aides but not at all by the RNs or LVN/LPNs.

The 20 tasks assigned to the RN and the LVN/LPN by the Advisory Committee turned out in practice as follows. Only four tasks were clearly differentiated in the direction thought to be appropriate by the Advisory Committee (Nos. 70.1, 75, 77.3-4, $p \leq 0.001$). Two tasks (Nos. 70.4 and 79) tended to be performed by the RN ($p \leq 0.001$). Seven tasks (Nos. 69.4, 69.7, 70.2-3, 70.5, 71 and 80) displayed the tendency toward most frequent performance by the LVN/LPN — task Nos. 69.4, 69.7 and 71 strikingly so. Task Nos. 69.2 and 69.5 showed a clear and statistically significant pattern of performance ($p \leq 0.05$ and 0.01, respectively) by the LVN/LPN and Aide. The remaining five tasks (Nos. 69.1, 69.6, 73, 77.1-2) reveal no statistically significant differences in frequency of performance by category of personnel, although task Nos. 73 and 77.1-2 tended toward more frequent performance by the RN and LVN/LPN.

GENERAL REMARKS — The rather sharp downward gradient in frequency of performance characteristic of this area probably reflects the change from relatively common procedures to relatively specialized ones. This remark needs to be qualified in light of the fact that all tasks in D-1 are organized around particular treatment and diagnostic activities, e.g., catheterization, rectal, vaginal and proctoscopic examination, bladder irrigation, etc. (See table 21.) Hence, the more frequent tasks undoubtedly involve procedures more or less common to several of the more specialized activities, e.g., emptying drainage bottles and bags, checking and maintaining drainage tubing without suction, etc.

By and large, most of the tasks in this area were performed by the two higher skilled categories (RN and LVN/LPN), either predominantly by one or the other, or jointly. In general, the LVN/LPN was the most frequent performer, suggesting that she is accorded a large measure of responsibility for the array of tasks comprising this area. The Aide, while usually a less frequent performer than the LVN/LPN or RN except in the least technical and least critical tasks, nonetheless participates in activities thought to be the province of her more highly trained colleagues. Again, a close inspection of the significance of the Aide's involvement in tasks formally beyond her training will be required in order to fully assess implications for curriculum construction.

APPLICATION OF HEAT, COLD, MEDICATED THERAPEUTIC AGENTS

DESCRIPTION OF THE AREA — Three basic categories classified the 20 tasks comprising this subarea: (a) "Apply hot therapeutic agents" (Nos. 82, 83, 84.1, 85.1, 86.1, 88, 91.2, 91.3, 92); (b) "Apply cold therapeutic agents" (Nos. 84.2, 85.2, 86.2, 87); and (c) "Apply medicated therapeutic agents" (Nos. 84.3, 85.3, 86.3, 89, 90, 91.1, 91.4).

These tasks, like the tasks in the preceding two subareas, are largely oriented to specific therapeutic goals and, consequently, the frequency of the occurrence is lower overall than for more generalized tasks. The most frequently occurring task (No. 87, "Apply ice bags") was reported by 40.7 percent of all personnel. (See tables 22 and 23). The least frequent task (No. 90, "Apply ultraviolet lamp") was reported by 1.5 percent of all personnel. The range of frequency was 39.2 percent, ranked 12.5 out of 16. The midmost task is between No. 86.1 (15.3 percent, all personnel) and No. 91.3 (15.1 percent, all personnel). The frequency of the midmost or median task is 15.2, 14th out of 16.

The spread of criticality scores is 4.0 ("above average," task Nos. 84.1, 84.2, 89, 90) to 2.83 (close to "average," task Nos. 91.3-4 and 92). The median criticality score was 3.63 (between "average" and "above average"), and ranks fourth out of 16.

The median score of the ten most frequently occurring tasks falls at 3.59; the median criticality of the ten less frequently occurring tasks was 3.65. Thus, the distribution of criticality scores appears to be uniform over the distribution of frequency of performance, making this subarea an

Table 22. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-2. Application of Heat, Cold, Medicated Therapeutic Agents

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
87. Apply ice bags.	ALL	1	40.7	1	27.7	1	46.2	1	48.9	-18%	-21%	-3%	3.66	5.11	.001
83. Apply heating pads.	NO JDGMT	2	25.6	3	14.6	2	34.6	5	28.2	-20%	-13%	+7%	3.5	14.25	.001
91.2 Administer sitz bath.	ALL	3.5	24.4	7.33	9.5	5.5	30.8	2.5	33.6	-21%	-24%	-3%	3.5	14.25	.001
92. Apply thermal blanket.	ALL	3.5	24.4	7.33	9.5	5.5	30.8	2.5	33.6	-21%	-24%	-3%	2.83	18.33	.001
82. Apply hot water bottle.	ALL	5	23.6	10	8.0	3.5	32.3	4	31.3	-24%	-23%	+1%	3.5	14.25	.001
84.2 Apply cold packs.	RN,LVN	6	23.1	4	12.4	3.5	32.3	6	25.2	-20%	-13%	+7%	4.0	1.25	.001
84.1 Apply hot packs.	RN,LVN	7	22.9	2	15.3	7	29.2	7	24.4	-14%	-9%	+5%	4.0	1.25	.05
85.1 Apply hot compresses.	RN,LVN	8	15.8	5	11.7	10.5	21.5	10	14.5	-10%	-3%	+7%	3.66	5.11	n.s.
85.2 Apply cold compresses.	RN,LVN	9	15.6	6	10.9	9	22.3	11	13.7	-11%	-3%	+8%	3.66	5.11	.05
86.1 Administer hot soaks.	RN,LVN	10	15.3	7.33	9.5	10.5	21.5	9	15.3	-12%	-5%	+7%	3.66	5.11	.05
91.3 Administer tepid baths.	ALL	11	15.1	12.5	5.8	8	23.8	8	16.0	-18%	-10%	+8%	2.83	18.33	.001
86.2 Administer cold soaks.	RN,LVN	12	13.1	11	6.6	12	20.0	12	13.0	-13%	-6%	+7%	3.66	5.11	.01
85.3 Apply medicated compresses.	RN,LVN	13	7.8	12.5	5.8	13	12.3	17.33	5.3	-6%	+1%	+7%	3.66	5.11	n.s.
84.3 Apply medicated packs.	RN,LVN	14.5	7.3	14.5	4.4	14.5	11.5	16	6.1	-8%	-2%	+6%	3.5	14.25	n.s.
86.3 Administer medicated soaks.	RN,LVN	14.5	7.3	14.5	4.4	16.5	10.0	14.5	7.6	-6%	-4%	+2%	3.66	5.11	n.s.
88. Apply heat cradles.	ALL	16	6.8	16.5	1.5	14.5	11.5	14.5	7.6	-10%	-6%	+4%	3.66	5.11	.01
91.4 Administer alcohol baths.	ALL	17	6.3	18.5	0.7	16.5	10.0	13	8.4	-9%	-7%	+2%	2.83	18.33	.01
89. Apply infra-red lamps.	NONE	18	4.0	16.5	1.5	18.5	5.4	17.33	5.3	-3%	-3%	0	4.0	1.25	n.s.
91.1 Apply medicated bath.	ALL	19	3.8	18.5	0.7	18.5	5.4	17.33	5.3	-4%	-4%	0	3.66	5.11	n.s.
90. Apply ultraviolet lamps.	NONE	20	1.5	20	0.0	20	3.1	20	1.5	-3%	-2%	+1%	4.0	1.25	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 23. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-2. Application of Heat, Cold, Medicated Therapeutic Agents (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
84.0 Apply packs:															
84.2 Cold.	RN,LVN	1	23.1	2	12.4	1	32.3	1	25.2	-20%	-13%	+7%	4.0	1.5	.001
84.1 Hot.	RN,LVN	2	22.9	1	15.3	2	29.2	2	24.4	-14%	-9%	+5%	4.0	1.5	.05
84.3 Medicated.	RN,LVN	3	7.3	3	4.4	3	11.5	3	6.1	-8%	-2%	+6%	3.5	3.0	n.s.
85.0 Apply compresses:															
85.1 Hot.	RN,LVN	1	15.8	1	11.7	2	21.5	1	14.5	-10%	-3%	+7%	3.66	1.33	n.s.
85.2 Cold.	RN,LVN	2	15.6	2	10.9	1	22.3	2	13.7	-11%	-3%	+8%	3.66	1.33	.05
85.3 Medicated.	RN,LVN	3	7.8	3	5.8	3	12.3	3	5.3	-6%	+1%	+7%	3.66	1.33	n.s.
86.0 Administer soaks:															
86.1 Hot.	RN,LVN	1	15.3	1	9.5	1	21.5	1	15.3	-12%	-5%	+7%	3.66	1.33	.05
86.2 Cold.	RN,LVN	2	13.1	2	6.6	2	20.0	2	13.0	-13%	-6%	+7%	3.66	1.33	.01
86.3 Medicated.	RN,LVN	3	7.3	3	4.4	3	10.0	3	7.6	-6%	-4%	+2%	3.66	1.33	n.s.
91.0 Administer baths:															
91.2 Sitz.	ALL	1	24.4	1	9.5	1	30.8	1	33.6	-21%	-24%	-3%	3.5	2.0	.001
91.3 Tepid.	ALL	2	15.1	2	5.8	2	23.8	2	16.0	-18%	-10%	+8%	2.83	3.5	.001
91.4 Alcohol.	ALL	3	6.3	3.5	0.7	3	10.0	3	8.4	-9%	-7%	+2%	2.83	3.5	.01
91.1 Medicated.	ALL	4	3.8	3.5	0.7	4	5.4	4	5.3	-4%	-4%	0	3.66	1.0	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

apparent exception to the pattern of low frequency/high criticality noticed in the preceding areas. It should be noted, however, that 19 out of 20 tasks have a frequency of 25.6 percent or less (all personnel), suggesting that the relationship of frequency and criticality previously observed still holds.

Close to one-half (8 of 20) of the tasks in this subarea were judged by the Advisory Committee to be appropriate to all levels of personnel (Nos. 82, 87, 88, 91.1-4, and 92). A similar proportion (9 of 20) were thought to be the responsibilities of the RN and LVN/LPN. Two tasks, Nos. 89 and 90, were not seen as nursing functions, and one task, No. 83, was not judged by the Advisory Committee.

All but one (No. 91.1, "Administer medicated baths") of the eight tasks deemed appropriate for all personnel were significantly differentiated toward performance by the LVN/LPN and the Aide; the one exception showed a pattern of a greater frequency performance by the LVN/LPN and Aide. Of the nine tasks viewed as the function of the RN and LVN/LPN, two (Nos. 84.1, "Apply hot packs" and 84.2, "Apply cold packs") were significantly differentiated toward performance by the LVN/LPN and Aide ($p \leq 0.05$ and 0.001, respectively). Four tasks (Nos. 85.2-3 and 86.1-2) were significantly differentiated toward performance by the LVN/LPN. Three tasks displayed no statistically significant differentiation (Nos. 84.3, 85.1, and 86.3), although there was a tendency for the LVN/LPN to be the most frequent performer. The two tasks not seen as nursing functions occurred relatively infrequently (No. 89, 4.0 percent, all personnel, and No. 90, 1.5 percent, all personnel).

Although the criticality of the tasks in this area was judged between "average" and "above average," the main performers are the LVN/LPN and the Aide. The nine tasks judged to be the province of the RN and LVN/LPN were, if differentiated at all, performed most frequently by the LVN/LPN. (The median criticality score for the eight tasks appropriate to all was 3.26; for the nine tasks assigned to the RN and LVN/LPN, 3.73.)

GENERAL REMARKS – The pattern of task performance in this area leans distinctly toward the two lower-skilled categories. While the range of frequency of performance for all personnel was relatively narrow, it is narrower still for the RN (27.7 percent) compared with the LVN/LPN (43.1 percent) and the Aide (47.4 percent). The tasks comprising the area on the whole are performed with relative infrequency. This suggests that an appropriate mode of providing whatever training might be called for by these tasks (particularly for the Aide) might be inservice education. While many of the tasks are deemed relatively critical, they do not occur often and might best be taught on the job. It is likely that personnel are, in fact, instructed in this fashion, and further investigation might indicate that no significant need exists for any detailed attention to the skills involved in these procedures.

MEDICATIONS

DESCRIPTION OF THE AREA AND GENERAL REMARKS – This subarea is made up of six tasks which involve the preparation and giving of medications. The most frequent task is No. 94.1 ("Give oral medications," 44.2 percent, all personnel); the least frequent is No. 94.3 ("Give inhalation medication," 12.3 percent, all personnel). (See tables 24 and 25.) The range of frequency of performance is 31.9 percent, 15th out of 16. The midmost task falls between No. 94.4 ("Give intramuscular medications," 41.5 percent, all personnel) and No. 94.2 ("Give rectal medications," 30.7 percent, all personnel). The frequency of the midmost task is 36.1 percent, ranked sixth out of 16.

The tasks are judged almost uniformly critical by the Advisory Committee, varying from 4.5 (No. 94.1-4) to 3.83 (No. 94.5). The median criticality score is 4.21, the highest of any area. One task (No. 94.5) is judged to be the sole responsibility of the RN. The rest are seen as the joint function of the RN and LVN/LPN.

In practice, these judgments of the Advisory Committee are reflected in clear-cut and decisive differentiation of task performance. Task No. 94.5 ("Give intravenous medications") is performed almost exclusively by the RN. Tasks allocated to the RN and LVN/LPN by the Advisory Committee are, in fact, performed by these personnel. In the case of the preparation of medication (No. 93) and the administration of oral and intramuscular medication, the RN, on the average, performs these activities twice as frequently as the LVN/LPN; for the administration of rectal and inhalation medication, the RN and LVN/LPN are equal. Aides play a very minor role in these activities. The striking differentiation of tasks in this area obviously reflects a well-established and communicated consensus in the hospital setting concerning what level of skills is required for tasks of this sort.

DIAGNOSTIC ACTIVITIES

DESCRIPTION OF THE AREA – The 21 "diagnostic" tasks in this nursing area may be placed in three categories: (a) "Pulse and respiration" (Nos. 104.1-2, 105-109); (b) "Temperature" (Nos. 103.1-3); and (c) "Specimen collection and testing" (Nos. 95-100, 101, 101.1, 102, 110, 111).

These tasks represent a mixture of routine monitoring of patient's condition (e.g., No. 103.1, "Take oral temperature") and the execution of certain phases of diagnostic procedures ordered by physician (e.g., No. 99, "Do nose and throat cultures").

The most frequently performed task is No. 105 ("Count respirations," 81.4 percent, all personnel); the least frequent is No. 111 ("Read skin test," 1.0 percent, all personnel). (See tables 26 and 27.) The range of frequency of performance is 80.4 percent, third highest overall. The midmost task is No. 103.3 ("Take temperature; axillary," 18.1 percent, all personnel). In terms of the distribution of the frequencies of the median tasks for all areas, D-4 ranked 12th. The first quarter of the overall distribution of tasks in terms of frequency range from 81.4 percent (No. 105) to 63.8 percent (No. 103.2), both figures reflecting the frequency of performance by all personnel. Frequency performance of the remaining tasks drops off markedly after this point, suggesting a change from routine to "special" diagnostic activities.

Table 24. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-3. Medications

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
94.1 Give oral medications.	RN,LVN	1	44.2	2.5	81.0	1	45.4	2	4.6	+36%	+76%	+40%	4.5	1.25	.001
93. Prepare medications.	RN,LVN	2	42.5	1	83.2	2	40.8	5.5	1.5	+42%	+81%	+39%	4.33	5.0	.001
94.4 Give intramuscular medications.	RN,LVN	3	41.5	2.5	81.0	3.5	39.2	4	2.3	+42%	+79%	+37%	4.5	1.25	.001
94.2 Give rectal medications.	RN,LVN	4	30.7	5	43.8	3.5	39.2	1	8.4	+5%	+36%	+31%	4.5	1.25	.001
94.5 Give intravenous medications.	RN	5	16.8	4	44.5	6	3.1	5.5	1.5	+42%	+43%	+1%	3.83	6.0	.001
94.3 Give inhalation medications.	RN,LVN	6	12.3	6	15.3	5	10.5	3	3.1	-4%	+12%	+16%	4.5	1.25	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

B

Table 25. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-3. Medications (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
94.0 Give medications:															
94.1 Oral.	RN,LVN	1	44.2	1.5	81.0	1	45.4	2	4.6	+36%	+76%	+40%	4.5	1.25	.001
94.4 Intramuscular.	RN,LVN	2	41.5	1.5	81.0	2.5	39.2	4	2.3	+42%	+79%	+37%	4.5	1.25	.001
94.2 Rectal.	RN,LVN	3	30.7	4	43.8	2.5	39.2	1	8.4	+5%	+36%	+31%	4.5	1.25	.001
94.5 Intravenous.	RN	4	16.8	3	44.5	5	3.1	5	1.5	+42%	+43%	+1%	3.83	5.0	.001
94.3 Inhalation.	RN,LVN	5	12.3	5	15.3	4	18.5	3	3.1	-4%	+12%	+16%	4.5	1.25	.001

---

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 26. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-4. Diagnostic Activities

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.") All Personnel (N=398) Rank	Percent	Staff Nurse (N=137) Rank	Percent	LVN/LPN (N=130) Rank	Percent	Nurses Aide (N=131) Rank	Percent	Percent Difference RN Versus LVN/LPN	RN Versus Aide	LVN Versus Aide	Criticality Score	Criticality Rank	p**
105. Count respirations.	ALL	1	81.4	1.5	75.2	1	92.3	3	77.1	-17%	-2%	+15%	3.0	12.33	.001
104.1 Count pulse at pressure points (radial).	ALL	2	74.9	1.5	75.2	3	83.1	5	66.4	-8%	+9%	+17%	3.0	12.33	.01
103.1 Take oral temperature.	ALL	3	74.6	3.5	54.0	2	87.7	1	83.2	-34%	-29%	+5%	2.83	15.33	.001
95. Collect urine specimens.	ALL	4	68.8	3.5	54.0	5	75.4	2	77.9	-21%	-24%	-3%	2.66	18.25	.001
103.2 Take rectal temperature.	ALL	5	63.8	5	43.1	4	76.2	4	73.3	-33%	-30%	+3%	3.0	12.33	.001
101.1 Test urine for sugar and acetone.	ALL	6	46.0	7	27.7	6	58.5	6	52.7	-31%	-25%	+6%	3.66	5.5	.001
96. Collect stool specimens.	ALL	7	34.9	8	19.0	7	44.6	7	42.0	-26%	-23%	+3%	2.66	18.25	.001
104.2 Count pulse: apical.	RN,LVN	8	33.4	6	37.2	8	41.5	10	21.4	-5%	+16%	+21%	3.16	10.0	.01
98. Collect sputum specimens.	ALL	9.5	18.6	13	7.3	10	23.1	8	26.0	-16%	-19%	-3%	2.66	18.25	.001
101. Do routine urinalysis.	NONE	9.5	18.6	9	16.1	9	23.8	11	16.0	-8%	0	+8%	2.66	18.25	n.s.
103.3 Take temperature: axillary.	ALL	11	18.1	10.5	12.4	11	20.0	9	22.1	-8%	-10%	-2%	2.83	15.33	n.s.
106. Count fetal heart tones.	RN,LVN	12	10.1	10.5	12.4	12	6.9	12	10.7	+5%	+1%	-4%	3.5	7.0	n.s.
97. Collect gastric specimens.	ALL	13	6.0	18.5	2.2	13	6.2	13	9.9	-4%	-8%	-4%	2.83	15.33	.05
108. Read cardiac monitors.	RN	14	5.8	12	8.8	14.5	5.4	16	3.1	+4%	+6%	+2%	4.5	2.5	n.s.
110. Assist with and/or take X-rays.	NONE	15	4.5	16	4.4	16	4.6	14	4.6	-1%	-1%	0	4.5	2.5	n.s.
99. Do nose and throat cultures.	RN,LVN	16	4.3	14	6.6	14.5	5.4	20.5	0.8	+2%	+6%	+4%	3.33	8.5	.05
100. Do wound cultures.	RN,LVN	17.5	2.8	15	5.1	17	2.3	20.5	0.8	+3%	+4%	+1%	3.33	8.5	n.s.
109. Assist with and/or take electrocardiograms.	NONE	17.5	2.8	17	2.9	18.5	1.5	15	3.8	+1%	-1%	-2%	4.83	1.0	n.s.
107. Read fetal monitoring devices.	RN	19	1.5	20.5	0.7	18.5	1.5	17.5	2.3	-1%	-1%	0	4.16	4.0	n.s.
102. Draw sample of blood.	NONE	20	1.3	18.5	2.2	20.5	0.0	19	1.5	+2%	0	-2%	3.66	5.5	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 26.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-4. Diagnostic Activities

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
111. Read skin tests.	RN	21	1.0	20.5	0.7	20.5	0.0	17.5	2.3	+1%	-1%	-2%	3.16	10.0	n.s.

---

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

Table 27. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF TREATMENTS, PROCEDURES, MEDICATIONS, AND DIAGNOSTIC ACTIVITIES: D-4. Diagnostic Activities (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
101.0 Urinalysis:															
101.1 Test urine for sugar and acetone.	ALL	1	46.0	1	27.7	1	58.5	1	52.7	-31%	-25%	+6%	3.66	1.0	.001
101.0 Do routine urinalysis.	NONE	2	18.6	2	16.1	2	23.8	2	16.0	-8%	0	+8%	2.66	2.0	n.s.
103.0 Take temperature:															
103.1 Oral.	ALL	1	74.6	1	54.0	1	87.7	1	83.2	-34%	-29%	+5%	2.83	2.5	.001
103.2 Rectal.	ALL	2	63.8	2	43.1	2	76.2	2	73.3	-33%	-30%	+3%	3.0	1.0	.001
103.3 Axillary.	ALL	3	18.1	3	12.4	3	20.0	3	22.1	-8%	-10%	-2%	2.83	2.5	n.s.
104.0 Count pulse:															
104.1 Pressure points (radial).	ALL	1	74.9	1	75.2	1	83.1	1	66.4	-8%	+9%	+17%	3.0	2.0	.01
104.2 Apical.	RN,LVN	2	33.4	2	37.2	2	41.5	2	21.4	-5%	+16%	+21%	3.16	1.0	.01

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Turning to the criticality dimension, the range of scores was from 4.83 (nearly "highly critical") to 2.66 (between "moderate" and "average" criticality). Task No. 109, "Assist with and/or take electrocardiograms," received the high score; task Nos. 95, 96 and 98 ("Collecting urine, stool, and sputum specimens," respectively) and No. 101 ("Routine urinalysis") received the low score. The median criticality score was 3.06 ("average" criticality), eighth in the overall ranking.

Dividing the distribution into tasks falling at or above the midmost tasks and tasks at or below it, the median criticality scores for the two halves are 2.81 and 3.44, respectively. This fits the familiar pattern observed previously; tasks judged to be relatively more critical tend to be relatively infrequent in occurrence.

Ten of the 21 tasks were deemed appropriate to all personnel by the Advisory Committee (Nos. 95, 98, 101.1, 103.1-3, 104.1, and 105). Three were thought to fall in the domain of the RN (Nos. 107, 108, 111); four were seen as the province of the RN and LVN/LPN (Nos. 99, 100, 104.2, 106); the remaining four (Nos. 101, 102, 109, 110) were not viewed as nursing functions.

In practice, all ten of the tasks appropriate to the three categories of personnel were differentiated. Seven of the ten displayed a statistically significant pattern of predominant performance by the LVN/LPN and Aide (Nos. 95, 96, 97, 98, 101.1, 103.1-2). One task (No. 103.3) also showed this tendency, although the differences were not significant. Task No. 105, "Count respirations," was performed frequently by all personnel, but the LVN/LPN was the most frequent performer. A similar tendency was displayed by No. 104.1 ("Count pulse, radial"). Task Nos. 105 and 104.1 ranked first and second in frequency of performance by all personnel. The consistent tendency for "general" tasks appropriate to all personnel to be differentiated in this manner has been remarked on previously.

The three tasks deemed the function of the RN displayed no statistically significant differentiation by category of personnel. Task No. 108 did show a tendency for more frequent performance by the RNs; task No. 111 tended to be performed more frequently by the Aide. None of the three tasks was reported to occur frequently.

Two of the four tasks thought to be the joint responsibility of the RN and LVN/LPN (Nos. 99 and 104.2) were, in fact, more frequently performed by them. The remaining two tasks (Nos. 100, 106) were not significantly differentiated, although only 0.8 percent of the Aides reported frequent performance of task No. 100 ("Do wound cultures").

All four of the tasks designated by the Advisory Committee as nonnursing functions were undifferentiated. Three (Nos. 102, 109, and 110) were infrequently performed (1.3, 2.8 and 4.5 percent, respectively, all personnel). Task No. 101 was reported to have been performed frequently by 18.6 percent of all personnel; LVN/LPNs were the most frequent performers of this activity ("Do routine urinalysis").

GENERAL REMARKS – Many of the tasks in this area may be viewed as routine procedures which would inevitably be included in basic training programs, e.g., counting respirations and taking temperatures. And, as has been the case with frequent, routine tasks, the LVN/LPN and the Aide are typically the most frequent performers. Included in this area are several rather specialized procedures which, apparently, occur infrequently, e.g., counting fetal heart tones. Since the data encompass medical-surgical, obstetric and pediatric services, the relatively low frequency of some of these specialized tasks may reflect the grouped data. In any event, such procedures as reading a cardiac monitor (presumably a constituent task of the cardiac care unit) reflect very specialized activities which would be part of special curricula designed to meet the distinctive needs of particular treatment units. These observations point to the need to perform a more detailed breakdown on the available data, a matter which will be discussed in the concluding part of this section.

5. Observation and Communication

OBSERVATION, ANALYSIS, INTERPRETATION

DESCRIPTION OF THE AREA – Fourteen tasks comprising this nursing area may be conveniently classified into three categories: (a) "Observe patient's condition" (Nos. 112-119); (b) "Identify patient's needs" (Nos. 120-122); and (c) "Evaluate patient care" (Nos. 123, 124.1-2).

These tasks differ from those considered previously in that they do not consist, in the main, of concrete services to the patient, but instead involve personnel in the work of looking for, recognizing and assessing a variety of signs and symptoms by patients which may indicate significant facts about their conditions.

Personnel in all categories report performing this set of tasks frequently (see tables 28 and 29). The most frequent set of tasks was No. 114, "Observe objective signs and symptoms of illness . . ." (89.2 percent, all personnel); the least frequent was No. 123, "Suggest and/or make changes in plan of care" (52.8 percent, all personnel). The range of frequency is 36.4 percent, ranked 14th overall. The median task falls between No. 116 ("Observe general behavior," 82.4 percent, all personnel) and No. 118 ("Observe negative . . . response to treatment . . . ," 80.2 percent, all personnel).* The frequency of the median task, 81.3 percent, ranks first among the 16 areas. As is evident, this subarea is characterized by a relatively high frequency of performance for these tasks, suggesting that they are routine facets of everyday work activities.

Criticality scores assigned by the Advisory Committee range from 4.16 ("above average") to 3.33 ("slightly over average"). Task No. 119 ("Interpret patient's signs, symptoms, behavior . . . ," 73.9 percent, all personnel) received the high score; task Nos. 124.1 ("Identify strengths, weaknesses in patient care," 58.1 percent, all personnel) and 124.2 ("Seek guidance to understand and improve performance in patient care," 60.3 percent, all personnel), shared the low score. The median criticality score for the overall distribution of tasks was 3.40, sixth among the 16 areas.

---

*The two tasks just above the median point, and the two just below, were tied in terms of rank on frequency of performance, all personnel. In order to decide which task in each of the tied pairs would be reported as immediately above or below the median, an ordering of each pair was obtained by reference to rank on frequency of performance by the RN.

Table 28. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-1. Observation, Analysis, Interpretation

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
114. Observe objective signs and symptoms of illness, disorder, body malfunctions, e.g., skin rashes, swelling, bleeding.	ALL	1	89.2	5	92.7	2	95.4	1	79.4	-2%	+14%	+16%	3.5	3.16	.001
112. Observe patient's general physical condition, e.g., color of skin and mucous membranes, condition of skin, eyes.	ALL	2	88.7	3.5	93.4	1	97.7	5.5	74.8	-5%	+18%	+23%	3.5	6.16	.001
115. Observe general emotional condition, e.g., facial expression, expression of eyes, posture, quality of voice, consciousness.	ALL	3	86.7	1.5	94.2	3.5	90.8	5.5	74.8	+3%	+19%	+16%	3.5	6.16	.001
120. Identify patient needs and/or problems, e.g., food, oxygen, affection, recognition.	RN,LVN	4	84.7	3.5	93.4	5	88.5	7	71.8	+4%	+21%	+17%	3.83	4.5	.001
117. Observe positive physical and emotional responses to treatments, medications, nursing care, e.g., decreased bleeding.	ALL	5	83.9	1.5	94.2	3.5	90.8	8	66.4	+3%	+28%	+25%	4.0	2.5	.001
121. Identify approaches and/or solutions for needs and/or problems, e.g., change patient's position, praise for efforts.	RN,LVN	6.5	82.4	7.5	87.6	9	82.3	2.5	77.1	+6%	+11%	+5%	3.83	4.5	n.s.
116. Observe general behavior, e.g., conversation; interactions with family, personnel, patients; eating habits; biting nails.	ALL	6.5	82.4	9	86.1	7	85.4	4	75.6	+1%	+10%	+9%	3.5	6.16	.05
118. Observe negative physical and emotional responses to treatments, medications, nursing care, e.g., decreased communication.	ALL	8.5	80.2	6	90.5	6	86.9	9	62.6	+4%	+28%	+24%	4.0	2.5	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 28. (Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-1. Observation, Analysis, Interpretation

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
113. Observe patient's general appearance, e.g., dress, condition of clothing, presence or absence of body odors, use of make-up.	ALL	8.5	80.2	11	78.8	8	84.6	2.5	77.1	-5%	+2%	+8%	3.16	14.0	n.s.
119. Interpret patient's signs, symptoms, behavior, e.g., increase in jaundice, pacing of floor.	RN,LVN	10	73.9	7.5	87.6	10.5	79.2	12	54.2	+9%	+34%	+25%	4.16	1.0	.001
122. Make plan for patient care, e.g., identify problem or need, secure information about need or problem.	ALL	11	71.6	10	80.3	10.5	76.2	10	58.0	+4%	+22%	+18%	3.5	6.16	.001
124.1 Identify strengths, weaknesses in patient care.	ALL	12	68.1	12.5	73.0	12	75.4	11	55.7	-2%	+17%	+19%	3.33	12.0	.001
124.2 Seek guidance to understand and improve performance in patient care.	ALL	13	60.3	14	59.9	13	68.5	13	52.7	-9%	+7%	+16%	3.33	12.0	.05
123. Suggest and/or make changes in plan of care.	ALL	14	52.8	12.5	73.0	14	51.5	14	32.8	+21%	+40%	+19%	3.5	6.16	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 29. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-1. Observation, Analysis, Interpretation (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
124.0 Evaluate participation in patient care:															
124.1 Identify strengths, weaknesses.	ALL	1	68.1	1	73.0	1	75.4	1	55.7	-2%	+17%	+19%	3.33	1.5	.001
124.2 Seek guidance to understand and improve performance.	ALL	2	60.3	2	59.9	2	68.5	2	52.7	-9%	+7%	+16%	3.33	1.5	.05

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

Examining the seven tasks above the median, and the seven below, the median criticality score of each subdistribution was 3.45 and 3.36, respectively. As in the case of Functional Area D-2, the distribution of criticality scores appears to be relatively uniform over the distribution of frequency of performance. As in D-2, the range of frequency of performance is restricted, although at the high end of the distribution in this case. For example, nine of the 14 tasks fall between 89.2 and 80.2 percent, all personnel, the lowest frequency for any task being 52.8 percent. This might suggest that the lack of variation in criticality scores is a function of the narrow range of frequency of performance, as appeared to be the case with D-2. It may be observed that this area is composed of a homogeneous set of tasks, i.e., all of them organized around attention to the patient's condition, just as in D-2, the set of tasks was oriented to providing specified treatment.

Eleven of the 14 tasks in this subarea were deemed by the Advisory Committee to be appropriate to all personnel (Nos. 112-118, 122, 123, 124.1-2). The remaining three tasks (Nos. 119-121) were thought to be joint responsibilities of the RN and LVN/LPN.

Like preceding areas, the general nursing tasks, with the exception of No. 113 ("Observe patient's general appearance"), were differentiated by category of personnel. Instead of being differentiated in the direction of performance by the LVN/LPN and Aide, however, eight of the 14 tasks showed a statistically significant tendency toward performance by the RN and LVN/LPN (Nos. 112, 114-122, 124.1). Task No. 123 ("Suggest and/or make changes in plan of care") displayed a gradient from RN to Aide, with the RN definitely the frequent performer. The LVN/LPN was the most frequent performer of task No. 124.2 ("Seek guidance to understand and improve performance of patient care").

Of the three tasks seen as the province of the RN and LVN/LPN, No. 119 ("Interpret patient's signs . . . ") was clearly differentiated in this fashion ($p \leq 0.001$). Task No. 120 ("Identify patient needs and/or problems") followed the pattern of No. 119, but fell short of statistical significance. Task No. 121 ("Identify approaches and/or solutions for needs and/or problems . . . ") was undifferentiated.

The pattern of differentiation noted above was, for most tasks, quite well defined. It should be noted that, for many tasks, even the category of personnel performing least frequently relative to other categories still performed frequently in absolute terms. For example, task Nos. 112, 114, 115 and 120 all showed differentiation in the direction of performance by the RN and LVN/LPN (significant at $p \leq 0.001$ in each case). Yet, 79.4 percent of the Aides reported performing task No. 112 frequently; frequency figures for Aides for Nos. 114, 115 and 120 are, respectively, 79.4, 74.8, and 71.8 percent.

GENERAL REMARKS – This area is characterized by tasks which occur with relatively high frequency in the daily routines of nursing personnel. In addition, the tasks are deemed to be relatively critical. In the judgment of the Advisory Committee, the overwhelming majority of these activities are the proper responsibility of all nursing occupations. Although a large proportion of these tasks show statistically significant differentiation in performance by category of personnel (toward the RN and LVN/LPN), this should not obscure the fact that all three nursing professions participate to a large extent in discharging these duties. Hence, a basic part of a curriculum for the training of the respective types of nursing personnel must continue to provide units emphasizing these skills, and where such units are lacking or underdeveloped, they should be added or improved.

ORAL AND WRITTEN COMMUNICATION

DESCRIPTION OF THE AREA – Nursing area E-2 of Functional Area E, "Oral and Written Communication," encompasses 50 tasks. These tasks may be classified into five categories: (a) "Record and obtain information on patient and nursing care" (Nos. 125.1-8, 126.1-3, 127.1-4, and 128-130); (b) "Communicate with patient" (Nos. 131.1, 132.1, 133.1); (c) "Communicate with other personnel" (Nos. 131.3-4, 132.3-4, 133.3-4, and 134.1-3); (d) "Communicate with patient's family" (Nos. 131.2, 132.2, 133.2); and (e) "Instruct patient, patient's family and other personnel" (Nos. 135.1-2, 136.1-6, 137.1-5, 138.1-3 and 139). These five categories represent activities directed toward observing and reporting information about the patient and his care and initiating a flow of information between the relevant parties involved, i.e., staff, patient, and the patient's family.

In contrast to the relatively constricted range of frequency in Functional Area E-1, frequency of past performance reported by all personnel in this area ranges from 79.1 percent (No. 125.3, "Record output . . . ") to 10.1 percent (No. 130, "Attend demonstrations of procedures and equipment"), a range of 69.0 percent (7th of 16 overall). (See table 30.) The midmost task is between No. 136.1 ("Teach patient, family, personnel, general hygiene," 46.5 percent, all personnel) and No. 137.3 ("Teach patient, family, personnel, skin care," 44.7 percent, all personnel). The frequency of the midmost task is 45.6 percent, third highest of all the areas.

Task Nos. 137.1 ("Teach patient, family, personnel in relation to treatments") and 137.2 ("Teach patient, family, personnel in relation to medications") share a criticality score of 4.0 ("above average"), the highest in this subarea. Task No. 129 ("Attend unit report") received the low score of 1.83 (close to "moderate" criticality). The median criticality score for the distribution of 50 tasks was 2.86 ("Nearly average" criticality), ninth overall.

The top 25 tasks had a median criticality score of 2.74, very close to the median of the overall distribution. The bottom 25 tasks had a slightly higher median criticality score of 3.26. This is consistent with previously observed areas in which the range of the frequency distribution of tasks is not constricted; higher frequency performance, lower criticality.

Thirty-two of the 50 tasks in this area were judged by the Advisory Committee to be appropriate to all personnel (Nos. 125.1-8, 126.1-3, 127.1, 127.4, 128-130, 132.1-4, 133.1-4, 134.1-3, 136.1, 136.4, 138.2 and 139). Fourteen were seen as the function of the RN and LVN/LPN (Nos. 127.2-3, 135.1-2, 136.2-3, 136.6, 137.1-5, 138.1, 138.3). Four tasks (Nos. 131.1-4) were not judged.

The vast majority of tasks labeled as appropriate to all personnel were differentiated in practice. Only five (Nos. 127.4, 128, 129, 130, 134.1) were frequently performed by roughly the same proportion of personnel in each category. Twenty tasks were most frequently performed by the RN and LVN/LPN (Nos. 125.5, 125.7-8, 126.2-3, 127.1, 132.1-4, 133.1-4, 134.3, 136.1, 136.4, 136.5, 138.2 and 139); by and large, these displayed large differences in frequency between the latter two categories and the Aide. (Levels of significance ranged from 0.05 to 0.001.) Four tasks were predominantly performed by LVN/LPNs (Nos. 125.1-4) and two tasks (Nos. 125.6, 126.1) were mainly the province of the RN, all six patterns significant at or beyond 0.001. One task (No. 132.2) was differentiated in the direction of the LVN/LPN and Aide ($p \leq 0.001$).

Table 30. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-2. Oral and Written Communication

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
125.3 Record output--drainage, discharge, urine, bowel movements.	ALL	1	79.1	12	75.2	1	93.8	2	68.7	-19%	+6%	+25%	2.83	28.16	.001
125.7 Recording nursing care.	ALL	2	77.9	4	85.4	3	90.0	6	58.0	-5%	+27%	+32%	3.0	21.14	.001
125.2 Record temperature, pulse, respiration, blood pressure.	ALL	3	77.6	10	78.8	2	93.1	5	61.1	-14%	+18%	+32%	2.83	28.16	.001
127.1 Read and obtain information from charts.	ALL	4	77.4	1	89.1	6	87.7	7	55.0	+1%	+34%	+33%	2.5	38.14	.001
125.4 Record intake--oral liquids and solids, parenteral.	ALL	5	76.4	14.5	73.7	4.5	89.2	3	66.4	-15%	+8%	+23%	2.83	28.16	.001
131.1 Talk with patient.	NO JDGMT	6	75.6	6.5	80.3	8.5	82.3	4	64.1	-2%	+16%	+18%	2.5	38.14	.001
125.8 Record observations of behavior, responses to therapy and care.	ALL	7	74.4	3	86.1	4.5	89.2	12	47.3	-3%	+39%	+42%	3.5	13.5	.001
133.1 Obtain information from patient.	ALL	8	70.6	8.5	79.6	8.5	82.3	11	49.6	-2%	+30%	+32%	1.16	47.5	.001
134.2 Obtain guidance from head nurse.	ALL	9	67.6	22.5	55.5	10.5	75.4	1	72.5	-19%	-17%	+2%	2.83	28.16	.001
125.5 Record tests, treatments, procedures.	ALL	10	67.1	5	82.5	7	83.8	20.5	34.4	-1%	+49%	+50%	3.0	21.14	.001
131.3 Talk with personnel.	ALL	11.5	65.6	8.5	79.6	12	74.6	15	42.0	+5%	+38%	+33%	2.5	38.14	.001
133.3 Obtain information from personnel.	ALL	11.5	65.6	6.5	80.3	13	73.1	14	42.7	+7%	+37%	+30%	2.66	34.25	.001
125.1 Record height, weight.	ALL	13	60.6	21	56.2	10.5	75.4	10	50.4	-19%	+6%	+25%	2.66	34.25	.001
131.2 Talk with family.	ALL	14	59.8	14.5	73.7	14	70.0	18.5	35.1	+4%	+39%	+35%	2.5	38.14	.001
132.1 Give information to patient.	ALL	15.5	59.3	13	74.5	15	66.2	17	36.6	+9%	+38%	+29%	3.0	21.14	.001
129. Attend unit report.	ALL	15.5	59.3	18	66.4	19	59.2	9	51.9	+7%	+14%	+7%	1.83	50.0	n.s.
139. Orient patient, family to hospital, e.g., routines, regulations, physical facilities, personnel.	ALL	17	59.0	17	67.2	16	65.4	13	44.3	+2%	+23%	+21%	3.33	15.33	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.

n.s. indicates p value greater than .05.

Table 30.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-2. Oral and Written Communication

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
136.3 Teach patient, family, personnel in the prevention of infection.	RN,LVN	32	39.4	30	48.2	31.5	46.9	34.5	22.9	+1%	+25%	+24%	3.33	15.33	.001
132.4 Give information to health team.	ALL	33	39.2	28	51.8	36	40.0	27.33	25.2	+12%	+27%	+15%	3.0	21.14	.001
137.4 Teach patient, family, personnel in relation to body alignment.	RN,LVN	34	38.2	40	39.4	27.5	50.8	30.5	24.4	-12%	+15%	+27%	3.83	3.5	.001
138.1 Teach patient, family, personnel exercise,ambulation.	RN,LVN	35	36.9	34.25	43.8	38.5	38.5	24	28.2	+5%	+16%	+11%	3.66	5.12	.05
127.2 Read and obtain information on patient condition and care from reference books (nursing).	RN,LVN	36	36.2	32.5	44.5	38.5	38.5	27.33	25.2	+6%	+20%	+14%	2.16	47.5	.01
136.6 Teach patient, family, personnel in nutrition.	RN,LVN	37	33.7	34.25	43.8	37	39.2	39	17.6	+5%	+26%	+21%	3.5	13.5	.001
137.5 Teach patient, family, personnel in care of equipment.	RN,LVN	38	33.4	42	33.6	33	43.1	33	23.7	-9%	+10%	+19%	3.66	5.12	.01
137.1 Teach patient, family, personnel in relation to treatments.	RN,LVN	39	31.9	39	40.9	34.5	40.8	42.33	13.7	0	+27%	+27%	4.0	1.5	.001
138.2 Teach patient, family, personnel in relation to rehabilitation, activities of daily living.	ALL	40	29.6	41	35.0	40	32.3	36.33	21.4	+3%	+14%	+11%	3.66	5.12	.05
127.4 Read and obtain information on patient condition and care from procedure books.	ALL	41	26.6	44	26.3	41	30.0	32	23.7	-4%	+2%	+6%	2.5	38.14	n.s.
126.1 Write report on patient census.	ALL	42.5	24.6	38	41.6	45	23.8	47	7.6	+18%	+34%	+16%	2.33	45.5	.001
137.2 Teach patient, family, personnel in relation to medications.	RN,LVN	42.5	24.6	34.25	43.8	43.5	24.6	49	4.6	+19%	+39%	+20%	4.0	1.5	.001
138.3 Teach patient, family, personnel in relation to bowel and bladder training.	RN,LVN	44	23.4	45.5	24.8	42	29.2	40	16.0	-4%	+9%	+13%	3.66	5.125	.05

*Appropriateness of task to category of personnel as determined by the National advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 30.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-2. Oral and Written Communication

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
132.3 Give information to personnel.	ALL	18	57.8	11	76.6	18	60.8	18.5	35.1	+16%	+42%	+26%	3.0	21.14	.001
133.2 Obtain information from family.	ALL	19	54.5	16	68.6	17	64.6	23	29.8	+4%	+39%	+35%	2.66	34.25	.001
134.1 Talk with team leader to obtain guidance.	ALL	20	50.8	34.25	43.8	20.5	56.2	8	52.7	-12%	-9%	+3%	2.83	28.16	n.s.
134.3 Talk with supervisor to obtain guidance.	ALL	21	50.3	22.5	55.5	20.5	56.2	16	38.9	0	+17%	+17%	2.83	28.16	.01
125.6 Record physician's orders.	ALL	22.5	47.7	2	86.9	34.5	40.8	42.33	13.7	+46%	+73%	+27%	3.66	5.12	.001
126.2 Write reports on patient's condition.	ALL	22.5	47.7	19	65.7	27.5	50.8	26	26.0	+15%	+40%	+25%	3.16	18.33	.001
135.2 Teach patient, family, personnel in relation to objective of nursing care of current illness, convalescence.	RN,LVN	24	47.2	20	61.3	23	54.6	27.33	25.2	+6%	+36%	+30%	3.66	5.125	.001
136.1 Teach patient, family, personnel general hygiene in relation to prevention of illness and promotion of health.	ALL	25	46.5	27	53.3	24	53.8	22	32.1	-1%	+21%	+22%	3.0	21.14	.001
137.3 Teach patient, family, personnel in skin care.	RN,LVN	26	44.7	32.5	44.5	22	55.4	20.5	34.4	-10%	+11%	+21%	3.83	3.5	.01
132.2 Give information to family.	ALL	27.5	42.7	24.5	54.7	25.5	51.5	36.33	21.4	+3%	+34%	+31%	3.0	21.14	.001
135.1 Teach patient, family, personnel physician's plan of care.	RN,LVN	27.5	42.7	24.5	54.7	25.5	51.5	36.33	21.4	+3%	+34%	+31%	3.66	5.12	.001
133.4 Talk with health team to obtain information.	ALL	29	42.2	26	54.0	30	47.7	30.5	24.4	+6%	+30%	+24%	2.66	34.25	.001
131.4 Talk with health team.	NO JDGMT	30.5	40.5	29	51.1	31.5	46.9	34.5	22.9	+4%	+28%	+24%	2.5	38.14	.001
136.4 Teach patient, family, personnel prevention of accidents.	ALL	30.5	40.5	31	45.3	29	49.2	25	26.7	-4%	+18%	+22%	3.66	5.125	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

Table 30. (Continued) APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-2. Oral and Written Communication

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
136.2 Teach patient, family, personnel in relation to physical examination.	RN,LVN	45	20.6	43	28.5	43.5	24.6	46	8.4	+4%	+21%	+17%	3.16	18.33	.001
127.3 Read and obtain information on patient care from dietary manuals.	RN,LVN	46	18.3	45.5	24.8	46	18.5	45	11.5	+6%	+13%	+7%	2.5	38.14	.05
128. Attend nursing care conferences.	ALL	47	15.1	49	14.6	47.5	16.2	41	14.5	-1%	0	+1%	2.33	45.5	n.s.
126.3 Write reports on accidents, incidents.	ALL	48	12.8	48	15.3	47.5	16.2	48	6.9	-1%	+8%	+9%	3.16	18.33	.05
136.5 Teach patient, family, personnel in relation to prevention of cancer.	ALL	49	10.6	47	16.8	49	11.5	50	3.1	+5%	+14%	+9%	3.33	15.33	.01
130. Attend demonstrations of procedures and equipment.	ALL	50	10.1	50	8.0	50	8.5	42.33	13.7	-1%	-6%	-5%	2.0	49.0	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Of the 14 tasks judged by the Advisory Committee to be the responsibility of the RN and LVN/LPN, all but three, in fact, displayed such a pattern of performance. Two of these three (Nos. 137.2-3) were predominantly performed by the RN ($p \leq 0.01$ and $p \leq 0.001$, respectively) and one (No. 137.4) was most frequently performed by the LVN/LPN ($p \leq 0.001$). All four tasks on which no judgment was available (Nos. 131.1-4) displayed a pattern of predominant performance by the RN and LVN/LPN ($p \leq 0.001$). (See table 31.)

On the basis of the above, it is clear that in practice, tasks in this area are clearly and consistently differentiated. While the Nurses' Aide by no means plays a small role in this subarea, the RN and LVN/LPN stand out as the key personnel in the execution of these tasks.

GENERAL REMARKS – While it must be kept in mind that Aides participate to an important extent in the activities included in this area, the often striking percentage differences in frequency of performance between the Aide and the other two nursing occupations should be noted. There is, perhaps, a simple explanation of these large differences. Most of the tasks in this area involve verbal exchanges; some of them require nursing personnel to assume a teaching function. A few tasks require the production of records of the patient's condition and of the physician's instructions. Conducting activities of this sort probably falls to the RN and LVN/LPN by virtue of their greater training, and the authority implicit in that training. With regard to the matter of authority, the status of the nursing occupation involved is also a relevant consideration, e.g., in dealings with physicians and with patients' families.

In terms of curricular development, the skills involved here (apart from competence in a number of technical matters, e.g., treatment procedures, proper recording of physician's orders, etc.) are interactional: effective communication with others, and problem-solving ability. Even though tasks requiring these skills are predominantly performed by the RN and LVN/LPN, some attention might be given to the development of these capacities in the Aide, since the latter category is involved in important interactions with patients, their families, and, to some extent, physicians.

Table 31. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-2. Oral and Written Communication (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
125.0 Record information on patient's chart and/or Kardex:															
125.3 Output--drainage, discharge, urine, bowel movements.	ALL	1	79.1	6	75.2	1	93.8	1	68.7	-19%	+6%	+25%	2.83	5.33	.001
125.7 Nursing care.	ALL	2	77.9	3	85.4	3	90.0	4	58.0	-5%	+27%	+32%	3.0	3.5	.001
125.2 Temperature, pulse, respiration, blood pressure.	ALL	3	77.6	5	78.8	2	93.1	3	61.1	-14%	+18%	+32%	2.83	5.33	.001
125.4 Intake--oral liquids and solids, parenteral.	ALL	4	76.4	7	73.7	4.5	89.2	2	66.4	-15%	+8%	+23%	2.83	5.33	.001
125.8 Observations of behavior, responses to therapy and care.	ALL	5	74.4	2	86.1	4.5	89.2	6	47.3	-3%	-39%	+42%	3.5	2.0	.001
125.5 Tests, treatments, procedures.	ALL	6	67.1	4	82.5	6	83.8	7	34.4	-1%	+49%	+50%	3.0	3.5	.001
125.1 Height, weight.	ALL	7	60.6	8	56.2	7	75.4	5	50.4	-19%	+6%	+25%	2.66	8.0	.001
125.6 Physician's orders.	ALL	8	47.7	1	86.9	8	40.8	8	13.7	+46%	+73%	+27%	3.66	1.0	.001
126.0 Write reports:															
126.2 Patient condition.	ALL	1	47.7	1	65.7	1	50.8	1	26.0	+15%	+40%	+25%	3.16	1.5	.001
126.1 Patient census.	ALL	2	24.6	2	41.6	2	23.8	3	7.6	+18%	+34%	+16%	2.33	3.0	.001
126.3 Accidents/incidents.	ALL	3	12.8	3	15.3	3	16.2	2	6.9	-1%	+8%	+9%	3.16	1.5	.05
127.0 Read and obtain information on patient's condition and care:															
127.1 Charts.	ALL	1	77.4	1	89.1	1	87.7	1	55.0	+1%	+34%	+33%	2.5	1.33	.001
127.2 Reference books (nursing).	RN,LVN	2	36.2	2	44.5	2	38.5	2	25.2	+6%	+20%	+14%	2.16	4.0	.01
127.4 Procedure books.	ALL	3	26.6	3	26.3	3	30.0	3	23.7	-4%	+2%	+6%	2.5	1.33	n.s.
127.3 Dietary manuals.	RN,LVN	4	18.3	4	24.8	4	18.5	4	11.5	+6%	+13%	+7%	2.5	1.33	.05

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 31. (Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-2. Oral and Written Communication (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
131.0 Talk with individuals and/or groups:															
131.1 Patient.	NO JDGMT	1	75.6	1	80.3	1	82.3	1	64.1	-2%	+16%	+18%	2.5	1.25	.001
131.3 Personnel.	ALL	2	65.6	2	79.6	2	74.6	2	42.0	+5%	+38%	+33%	2.5	1.25	.001
131.2 Family.	ALL	3	59.8	3	73.7	3	70.0	3	35.1	+4%	+39%	+35%	2.5	1.25	.001
131.4 Health team.	NO JDGMT	4	40.5	4	51.1	4	46.9	4	22.9	+4%	+28%	+24%	2.5	1.25	.001
132.0 Talk with individuals and/or groups to give information:															
132.1 Patient.	ALL	1	59.3	2	74.5	1	66.2	1	36.6	+9%	+38%	+29%	3.0	1.25	.001
132.3 Personnel.	ALL	2	57.8	1	76.6	2	60.8	2	35.1	+16%	+42%	+26%	3.0	1.25	.001
132.2 Family.	ALL	3	42.7	3	54.7	3	51.5	4	21.4	+3%	+34%	+31%	3.0	1.25	.001
132.4 Health team.	ALL	4	39.2	4	51.8	4	40.0	3	25.2	+12%	+27%	+15%	3.0	1.25	.001
133.0 Talk with individuals and/or groups to obtain information:															
133.1 Patient.	ALL	1	70.6	2	79.6	1	82.3	1	49.6	-2%	+30%	+32%	2.16	4.0	.001
133.3 Personnel.	ALL	2	65.6	1	80.3	2	73.1	2	42.7	+7%	+37%	+30%	2.66	1.33	.001
133.2 Family.	ALL	3	54.5	3	68.6	3	64.6	3	29.8	+4%	+39%	+35%	2.66	1.33	.001
133.4 Health team.	ALL	4	42.2	4	54.0	4	47.7	4	24.4	+6%	+30%	+24%	2.66	1.33	.001
134.0 Talk with personnel to obtain guidance:															
134.2 Head nurse.	ALL	1	67.6	1.5	55.5	1	75.4	1	72.5	-19%	-17%	+2%	2.83	1.33	.001
134.1 Team leader.	ALL	2	50.8	3	43.8	2.5	56.2	2	52.7	-12%	-9%	+3%	2.83	1.33	n.s.
134.3 Supervisor.	ALL	3	50.3	1.5	55.5	2.5	56.2	3	38.9	0	+17%	+17%	2.83	1.33	.01

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 31. (Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: E-2. Oral and Written Communication (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
135.0 Teach patient, family, personnel in relation to current illness, convalescence:															
135.2 Objectives of nursing care.	RN,LVN	1	47.2	1	61.3	1	54.6	1	25.2	+6%	+36%	+30%	3.66	1.5	.001
135.1 Physician's plan of care.	RN,LVN	2	42.7	2	54.7	2	51.5	2	21.4	+3%	+34%	+31%	3.66	1.5	.001
136.0 Teach patient, family, personnel in relation to prevention of illness and promotion of health:															
136.1 General hygiene.	ALL	1	46.5	1	53.3	1	53.8	1	32.1	-1%	+21%	+22%	3.0	6.0	.001
136.4 Prevention of accidents.	ALL	2	40.5	3	45.3	2	49.2	2	26.7	-4%	+18%	+22%	3.66	1.0	.001
136.3 Prevention of infections.	RN,LVN	3	39.4	2	48.2	3	46.9	3	22.9	+1%	+25%	+24%	3.33	3.5	.001
136.6 Nutrition.	RN,LVN	4	33.7	4	43.8	4	39.2	4	17.6	+5%	+29%	+21%	3.5	2.0	.001
136.2 Physical examination.	RN,LVN	5	20.6	5	28.5	5	24.6	5	8.4	+4%	+21%	+17%	3.16	5.0	.001
136.5 Prevention of cancer.	ALL	6	10.6	6	16.8	6	11.5	6	3.1	+5%	+14%	+9%	3.33	3.5	.01
137.0 Teach patient, family, personnel in relation to supportive nursing care and nursing procedures:															
137.3 Skin care.	RN,LVN	1	44.7	1	44.5	1	55.4	1	34.4	-10%	+11%	+21%	3.83	3.5	.01
137.4 Body alignment.	RN,LVN	2	38.3	4	39.4	2	50.8	2	24.4	-12%	+15%	+27%	3.83	3.5	.001
137.5 Care of equipment.	RN,LVN	3	33.4	5	33.6	3	43.1	3	23.7	-9%	+10%	+19%	3.66	5.0	.01
137.1 Treatments.	RN,LVN	4	31.9	3	40.9	4	40.8	4	13.7	0	+27%	+27%	4.0	1.5	.001
137.2 Medications.	RN,LVN	5	24.6	2	43.8	5	24.6	5	4.6	+19%	+39%	+20%	4.0	1.5	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 31. (Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF OBSERVATION AND COMMUNICATION: B-2. Oral and Written Communication

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
138.0 Teach patient, family, personnel, in relation to rehabilitation:															
138.1 Exercise, ambulation.	RN,LVN	1	36.9	1	43.8	1	38.5	1	28.2	+5%	+16%	+11%	3.66	1.33	.05
138.2 Activities of daily living.	ALL	2	29.6	2	35.0	2	32.3	2	21.4	+3%	+14%	+11%	3.66	1.33	.05
138.3 Bowel and bladder training.	RN,LVN	3	23.4	3	24.8	3	29.2	3	16.0	-4%	+9%	+13%	3.66	1.33	.05

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

6. Administration, Coordination, Housekeeping

ADMINISTRATION AND COORDINATION

DESCRIPTION OF THE AREA – The nursing area, "Administration and Coordination," is composed of 31 tasks; these tasks may be broken down into three categories: (a) "Administrative duties" (Nos. 140, 142, 143, 147, 149.1-3, 150.1-4, 151, 152.1-2, 153.1-2 and 154); (b) "Housekeeping duties" (Nos. 141.1-2, 148.1-5, 155, 156); (c) "Nursing assistance" (Nos. 144-146, 149.4, 150.5). In general, this subarea organizes those tasks that are directed to the supervision of nursing activities in the hospital.

Task No. 149.4 ("Assist personnel in giving nursing care," 59.5 percent, all personnel) is the most frequently occurring task; No. 151 ("Write and/or assist in writing evaluations of performance of unit personnel," 2.5 percent, all personnel) is the least frequent (see tables 32 and 33). The range of frequency is 57.0 percent, tenth out of 16. The midmost task was No. 150.1 ("Assign patients to team members," 23.1 percent, all personnel); the frequency of the midmost task ranks tenth among the 16 areas.

The range of criticality scores was from 4.5 (No. 147, "Check accuracy in administering and charting treatments and medications, procedures, orders, observations," 41.7 percent, all personnel) to 1.83 (No. 155, "Deliver requisitions, credits, charges to other departments," 42.2 percent, all personnel), or from midway between "above average" and "highly critical" to close to "moderate" criticality. The median criticality score for the overall distribution was 2.68 (tending toward "average" criticality) and ranks 12.5 out of 16.

Looking at the distribution of scores above and below the midmost task (including in each case the midmost task), the criticality scores are, respectively, 2.76 and 2.68. Thus, the distribution of criticality scores appears fairly uniform over the distribution of frequency of task performance.

Earlier, the inverse relationship between criticality and frequency was discussed in terms of a distinction between "routine," more generalized services and "special" services tailored to particular patient conditions or rare events. The hypothesis was that generalized services tend to be rated as less critical than specialized services. In those cases of a restricted range of frequency, variation in criticality scores across the distribution of frequency of performance would not be as great as in cases of a low range of frequency. It was suggested that a broad range of frequency of performance within a given area was a function of heterogeneity, i.e., a mixture of generalized and specialized services.

In the present case, frequency of task performance exhibits a relatively narrow range. The nature of the tasks mentioned is relatively specialized, although not in terms of therapeutic procedures tailored to specific patient conditions; instead, the tasks are oriented toward record-keeping and other services necessary to support both generalized and specialized procedures for patient care; It will be evident upon examining the division of labor in this area that task performance, itself, is clearly specialized both in theory and in practice.

In the judgment of the Advisory Committee, only four of the 31 tasks were deemed appropriate to all personnel (Nos. 141.1-2, 150.5, 153.1). Thirteen tasks were seen as the function of the RN

Table 32. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION, HOUSEKEEPING: F-1. Administration and Coordination

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.") All Personnel (N=398) Rank		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		Percent Difference RN Versus		LVN Versus	Criticality		p**
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
149.4 Assist personnel in giving nursing care.	RN	1	59.5	2	79.6	1	65.4	4	32.8	+15%	+47%	+32%	3.5	4.5	.001
150.5 Assist team members in giving nursing care.	ALL	2	53.5	6	67.9	2	60.8	5	31.3	+7%	+37%	+30%	2.83	16.25	.001
156. Deliver specimens to laboratory.	NONE	3	52.5	18	42.3	3	57.7	1	58.0	-16%	-16%	0	2.16	25.5	.05
141.1 Check working order of equipment.	ALL	4	51.3	8.5	60.6	4.5	54.6	2	38.2	+6%	+23%	+17%	3.33	6.33	.001
154. Prepare requisitions, credits, charges, e.g., equipment, supplies, treatments, procedures, diets.	NONE	5	51.0	5	74.5	4.5	54.6	6	22.9	+20%	+52%	+32%	2.16	25.5	.001
155. Deliver requisitions, credits, charges to other departments.	NONE	6	42.2	16	46.7	6	45.4	3	34.4	+2%	+13%	+11%	1.83	31.0	n.s.
147. Check accuracy in administering and charting treatments and medications, procedures, orders, observations.	RN	7	41.7	4	77.4	7	40.0	14.5	6.1	+37%	+71%	+34%	4.5	1.0	.001
145. Take and record physician's verbal orders.	NO JDGMT	8.5	37.4	1	80.[illegible]	14	26.2	18.25	3.8	+54%	+76%	+22%	3.0	10.16	.001
146. Transcribe physician's orders.	NO JUGMT	8.5	37.4	3	7[illegible].1	13	28.5	18.25	3.8	+49%	+74%	+25%	4.33	2.0	.001
144. Assist physician with rounds to patients.	RN,LVN	10	35.4	7	65.7	8	34.6	17	4.6	+31%	+61%	+30%	3.0	10.16	.001
148.5 Take inventory of drugs.	NO JDGMT	11	31.9	8.5	60.6	11.5	30.8	22.5	3.1	+30%	+58%	+28%	2.33	23.5	.001
141.2 Inventory emergency supplies, equipment, drugs.	ALL	12	30.9	14	48.9	10	31.5	10	11.5	+17%	+37%	+20%	2.83	16.25	.001
140. Analyze nursing care requirements and report staffing needs.	RN	13	28.6	19	38.7	15	25.4	7	21.4	+14%	+18%	+4%	3.5	4.5	.01
148.4 Inventory of unit supplies of dressings, tape.	NO JDGMT	14	27.1	20	35.0	9	32.3	9	13.7	+3%	+21%	+18%	2.0	27.25	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.
**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 32.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION, HOUSEKEEPING:
F-1. Administration and Coordination

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
148.3 Inventory unit's disposable and non-disposable equipment.	NO JDGMT	15	23.6	21	30.7	11.5	30.8	13	9.2	0	+22%	+22%	2.0	27.25	.001
150.1 Assign patients to team members.	RN	16	23.1	10.25	52.6	19.5	13.1	24.25	2.3	+40%	+51%	+11%	3.16	9.0	.001
150.2 Assign unit tasks to team members.	NO JDGMT	17	22.9	10.25	52.6	19.5	13.1	28.25	1.5	+40%	+51%	+11%	3.0	10.16	.001
150.3 Supervise and evaluate performance of team members.	RN	18.5	22.4	10.25	52.6	22	11.5	28.25	1.5	+41%	+51%	+10%	3.66	3.0	.001
149.1 Assign patients and personnel to nursing teams.	RN	18.5	22.4	10.25	52.6	23	10.8	24.25	2.3	+42%	+51%	+9%	3.0	10.16	.001
149.3 Supervise and evaluate performance of unit personnel	RN	20	19.6	15	47.4	26	8.5	28.25	1.5	+38%	+45%	+7%	3.33	6.33	.001
149.2 Assign unit tasks to teams.	RN	21	19.1	17	44.5	24	10.0	28.25	1.5	+35%	+43%	+8%	2.83	16.25	.001
148.1 Take inventory of unit linen.	NO JDGMT	22	18.3	23.5	21.2	16	16.9	8	16.8	+4%	+4%	0	2.0	27.25	n.s.
143. Inform personnel of new or changed policies and procedures.	RN	23	15.8	22	24.8	21	12.3	12	9.9	+13%	+15%	+2%	3.33	6.33	.01
142. Orient new personnel to unit facilities, routines and other personnel.	RN	24	13.6	27.5	16.1	18	13.8	11	10.7	+2%	+5%	+3%	3.0	10.16	n.s.
153.2 Initiate service or referral for patient.	RN	25	12.1	27.5	16.1	17	16.2	18.25	3.8	0	+12%	+12%	2.5	20.33	.01
148.2 Take inventory of unit's stationery supplies.	NO JDGMT	26	11.6	26	19.0	25	9.2	14.5	6.1	+10%	+13%	+3%	2.0	27.25	.01
150.4 Conduct nursing care conferences.	RN	27	10.6	23.5	21.2	28	6.9	22,5	3.1	+14%	+18%	+4%	3.0	10.16	.001
152.1 Schedule activities, e.g., physical therapy.	NO JDGMT	28	9.8	25	20.4	29.5	4.6	18.25	3.8	+15%	+16%	+1%	2.33	23.5	.001
153.1 Make recommendations for service or referral.	ALL	29	6.8	29	13.1	29.5	4.6	24.25	2.3	+8%	+11%	+3%	2.5	20.33	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 32.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION AND HOUSEKEEPING: F-1. Administration and Coordination

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
152.2 Supervise patient participation, e.g., in activities, dances, games.	RN	30	6.0	30.5	5.1	27	7.7	16	5.3	-3%	0	+3%	2.5	20.33	n.s.
151. Write and/or assist in writing evaluations of performance of unit personnel.	RN	31	2.5	30.5	5.1	31	0.0	24.25	2.3	+5%	+3%	-2%	2.83	16.25	.05

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.
**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

(Nos. 140, 142, 143, 147, 149.1, 149.3-4, 150.1, 150.3-4, 151, 152.2, 153.2), and one task (No. 144) was thought to be the joint responsibility of the RN and LVN/LPN. Three tasks (Nos. 154, 155, 156) were not viewed as nursing functions, and the Advisory Committee rendered no judgment on the remaining ten tasks (Nos. 145, 146, 148.1-5, 149.2, 150.2, 152.1).

Virtually all tasks in the subarea were significantly differentiated; the largest number of these were in practice performed mostly by the RN. All the four tasks thought to be appropriate to all personnel were differentiated; two (Nos. 141.2 and 153.1) were performed predominantly by the RN ($p \leq 0.001$). Nine of the 13 tasks designated as the function of the RN were, in fact, almost equally performed by her (Nos. 140, 143, $p \leq 0.01$; Nos. 147, 149.1, 149.3, 149.4, 150.1, 150.3-4, $p \leq 0.001$). One task (No. 153.2) was performed mostly by the RN and LVN/LPN ($p \leq 0.001$), and one task (No. 151) was performed mostly by the RN and Aide ($p \leq 0.05$). In the latter case, the task was the one least frequently occurring in this subarea (1.5 percent, all personnel) and was reported by 5.1 percent of the RNs and 2.3 percent of the Aides. No LVN/LPN reported performing this task frequently. The remaining two tasks in this group (Nos. 142, 152.2) were not significantly differentiated.

Of the three tasks judged by the Advisory Committee not to be nursing functions, one (No. 154) was predominantly performed by the RN ($p \leq 0.001$), one (No. 156) by the LVN/LPN and Aide ($p \leq 0.05$), and one (No. 155) was not significantly differentiated.

Nine of the tasks on which no judgment was made by the Advisory Committee were differentiated; seven of these were most frequently performed by the RN (Nos. 145, 146, 148.2, 148.5, 149.2, 150.2, 152.1, all significant at $p \leq 0.001$ except No. 148.2, which was significant to $p \leq 0.01$). Two were most frequently performed by the RN and LVN/LPN (Nos. 148.3 and 148.4, $p \leq 0.001$), and the remaining task (No. 148.1) displayed no significant difference in terms of frequency of performance by category of personnel.

GENERAL REMARKS – It is clear that the majority of tasks in this area were specialized in the sense that they were performed by personnel having the most specialized training and skills, e.g., 19 out of 31 tasks were performed most frequently by the RN. Upon inspecting the frequency of task performance by Aides, it should be noted that the range of distribution is from 58.0 to 1.5 percent, with a steep dropoff in frequency (e.g., the second most frequent task was 38.2 percent, the tenth most frequent 11.5 percent, compared with 79.6 and 52.6 percent, respectively, for the RN and 60.8 and 31.5 percent, respectively, for the LVN/LPN.

It seems clear that in the area of administration, the field is left largely to the RN, with some assistance from the LVN/LPN. It is, perhaps, the demand upon the RN (and to a lesser, but probably increasing extent, on the LVN/LPN) to perform more and more in the areas of administration, coordination, record-keeping, instruction, etc., that has brought about the kind of division of labor apparent in this report. While by law and medical tradition certain tasks (e.g., administration of intravenous fluids) remain exclusively the province of the more highly trained RN, a large number of tasks involving routine patient care and treatment fall to the LVN/LPN and Aide. As medical care in the hospital setting becomes even more sophisticated and requires even greater coordination and supervisory effort, it can be expected that further specialization will take place, including the upgrading of the skills of the less professionalized occupations. What this area suggests is not merely that the RN must receive instruction in the administrative aspects of her task,

Table 33. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION, HOUSEKEEPING: F-1. Administration and Coordination (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
141.0 Maintain ward safety:															
141.1 Check working order of equipment.	ALL	1	51.3	1	60.6	1	54.6	1	38.2	+6%	+23%	+17%	3.33	1.0	.001
141.2 Inventory emergency supplies, equipment, drugs.	ALL	2	30.9	2	48.9	2	31.5	2	11.5	+17%	+37%	+20%	2.83	2.0	.001
148.0 Take inventory of unit supplies:															
148.5 Drugs.	NO JDGMT	1	31.9	1	60.6	2.5	30.8	5	3.1	+30%	+58%	+28%	2.33	1.0	.001
148.4 Dressings, tape.	NO JDGMT	2	27.1	2	35.0	1	32.3	2	13.7	+3%	+21%	+18%	2.0	3.25	.001
148.3 Disposable and non-disposable equipment.	NO JDGMT	3	23.6	3	30.7	2.5	30.8	3	9.2	0	+22%	+22%	2.0	2.25	.001
148.1 Linen.	NO JDGMT	4	18.3	4	21.2	4	16.9	1	16.8	+4%	+4%	0	2.0	2.25	n.s.
148.2 Stationery supplies.	NO JDGMT	5	11.6	5	19.0	5	9.2	4	6.1	+10%	+13%	+3%	2.0	2.25	.01
149.0 Direct personnel and activities of nursing unit:															
149.4 Assist personnel in giving nursing care.	RN	1	59.5	1	79.6	1	65.4	1	32.8	+15%	+47%	+32%	3.5	1.0	.001
149.1 Assign patients, and personnel to nursing teams.	RN	2	22.4	2	52.6	2	10.8	2	2.3	+42%	+51%	+9%	3.0	3.0	.001
149.3 Supervise and evaluate performance of unit personnel.	RN	3	19.6	3	47.4	4	8.5	3.5	1.5	+38%	+45%	+7%	3.33	2.0	.001
149.2 Assign unit tasks to teams.	RN	4	19.1	4	44.5	3	10.0	3.5	1.5	+35%	+43%	+8%	2.83	4.0	.001
150.0 Direct personnel and activities of nursing team:															
150.5 Assist team members in giving nursing care.	ALL	1	53.5	1	67.9	1	60.8	1	31.3	+7%	+37%	+30%	2.83	5.0	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 33.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION, HOUSEKEEPING:
F-1. Administration and Coordination (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
150.1 Assign patient to team members.	RN	2	23.1	2.33	52.6	2.5	13.1	3	2.3	+40%	+51%	+11%	3.16	2.0	.001
150.2 Assign unit tasks to team members.	RN	3	22.9	2.33	52.6	2.5	13.1	4.5	1.5	+40%	+51%	+11%	3.0	3.5	.001
150.3 Supervise and evaluate performance of team members.	RN	4	22.4	2.33	52.6	4	11.5	4.5	1.5	+41%	+51%	+10%	3.66	1.0	.001
150.4 Conduct nursing care conferences.	RN	5	10.6	5	21.2	5	6.9	2	3.1	+14%	+18%	+4%	3.0	3.5	.001
152.0 Plan and direct patient activities:															
152.1 Schedule activities, e.g., physical therapy.	NO JDGMT	1	9.8	1	20.4	2	4.6	2	3.8	+15%	+16%	+1%	2.33	2.0	.001
152.2 Supervise patient participation in activities, e.g., dances, games.	RN	2	6.0	2	5.1	1	7.7	1	5.3	-3%	0	+3%	2.5	1.0	n.s.
153.0 Obtain services of or refer patient to other health team members:															
153.2 Initiate (make telephone calls or write requests) service or referral.	RN	1	12.1	1	16.1	1	16.2	1	3.8	0	+12%	+12%	2.5	1.5	.01
153.1 Make recommendations for service or referral.	ALL	2	6.0	2	13.1	2	4.6	2	2.3	+8%	+11%	+3%	2.5	1.5	.001

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

but that the skills of the less well-trained occupations must be sharpened in anticipation of the demands that are (or are likely to be) placed upon them.

HOUSEKEEPING FUNCTIONS

DESCRIPTION OF THE AREA – Thirteen tasks comprised the last nursing area of the task survey. They fit into two categories: (a) "Housekeeping, patients' unit" (Nos. 157.1-3, 166, 167); (b) "Housekeeping, general" (Nos. 158-165).

The first-ranked task in terms of frequency is No. 167, "Distribute supplies and equipment to patient's room" (51.3 percent, all personnel); the last-ranked task is No. 163, "Assemble surgical or obstetrical pack" (1.1 percent, all personnel). (See table 34.) The range in frequency is 39.2 percent, ranking 12.5 out of 16. The midmost task is No. 166, "Stock equipment and supplies" (27.6 percent, all personnel), eighth of 16 in terms of median task frequency. It may be noted that the range frequency for the RN is 35.8 percent (No. 167) to 5.8 percent (No. 157.3), compared with 60.8 percent (No. 157) to 14.6 percent (Nos. 157.3, 163) for the LVN/LPN and 61.8 percent (No. 159) to 10.7 percent (No. 163) for the Aide. Although the RN does participate in "housekeeping" activities, she does so on a relatively limited basis.

The highest criticality score assigned to a task in the subarea was 3.13 ("average" criticality); the lowest was 1.33 ("flexible"). Task No. 160 ("Sterilize equipment and supplies") received the former score; task No. 166 ("Care for flowers") received the latter. The median criticality score was 1.81 (close to "moderate" criticality), 15th of 16 overall. The median criticality score for tasks at or above the median of all distribution was 1.72; tasks at or below the median had a median criticality score of 1.82.

None of the tasks in this subarea was judged by the Advisory Committee to be a nursing function. Nine of the 13 were significantly differentiated at the 0.01 level or less – displaying a pattern of more frequent performance by the LVN/LPN and Aide (Nos. 157.1-3, 158, 159, 162, 164, 167). The remaining tasks (Nos. 160, 161, 163, 165) showed no significant difference in frequency performance by category of personnel. While tasks in this area were deemed to fall outside the domain of nursing activities as seen by the Advisory Committee, they indicate that these are nonetheless part of the daily routine of personnel, particularly the LVN/LPN and Aide.

GENERAL REMARKS – Perhaps the only surprise to be found in this area is the extent to which the RN participates in these housekeeping activities, none of which are viewed as nursing functions. While not seen as nursing functions, and ranked quite low on the criticality scale, tasks such as these are nonetheless part of the maintenance of the hospital service as a functioning patient-care unit. That nursing personnel participate may be seen as a failure in the organization of work activities assigned to ancillary employees; on the other hand, it reflects the fact that tasks that need doing get done, even though they may be the responsibility of others. Within proper limits, overlooking the boundaries of one's responsibilities in the service of the overall functioning of the unit evidences a certain dedication. The function of a well-conceived curriculum is to provide the necessary skills to perform a needed task competently; it should not also draw rigid boundaries which define certain tasks as "someone else's worry" unless such boundaries are necessary for patient protection or seriously interfere with the performance of more critical tasks.

Table 34. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION, HOUSEKEEPING: F-2. Housekeeping Functions

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
167. Distribute supplies and equipment to patient's room, e.g., linen, thermometers, dressings, foot boards.	NONE	1	51.3	1	35.8	1	60.8	2	58.0	-25%	-22%	+3%	1.83	5.125	.001
159. Clean equipment and utensils, glassware, e.g., suction machine, wash basins, water glasses, pitchers.	NONE	2	50.3	2	32.8	2	56.9	1	61.8	-24%	-29%	-5%	1.84	5.125	.001
158. Clean service areas on unit, e.g. service room, treatment room, utility room, kitchen.	NONE	3	45.2	3	26.3	3	53.8	3	56.5	-28%	-31%	-3%	1.83	5.125	.001
164. Obtain and deliver supplies and equipment, e.g., sheepskins, hot water bottles, suction machines, utensils.	NONE	4	35.2	5	24.1	4	40.0	4	42.0	-16%	-18%	-2%	1.83	5.125	.01
157.1 Clean patient's unit furniture.	NONE	5	27.9	6.5	14.6	5	37.7	7	32.1	-23%	-17%	+6%	1.83	5.125	.001
165. Stock equipment and supplies, e.g., utensils, paper goods, linen, disposable materials.	NONE	6	27.6	4	25.5	8	31.5	8	26.0	-6%	0	+6%	1.83	5.125	n.s.
166. Care for flowers, e.g., arrange and distribute.	NONE	7	25.9	11.5	9.5	6	33.8	5	35.1	-24%	-25%	-1%	1.33	13.0	.001
157.2 Clean patient's unit room.	NONE	8	23.9	8	11.7	9	27.7	6	32.8	-16%	-21%	-5%	1.83	5.125	.001
162. Assemble patient linen packs.	NONE	9	22.4	11.5	9.5	7	33.1	9	25.2	-23%	-15%	+8%	1.83	5.125	.001
160. Sterilize equipment and supplies in autoclave, e.g., surgical instruments, linen packs.	NONE	10	15.1	6.5	14.6	11	17.7	11	13.0	-3%	+2%	+5%	3.16	1.5	n.s.
161. Sterilize equipment by boiling water or placing in solutions e.g., surgical instruments.	NONE	11	13.6	10	10.2	10	18.5	12	12.2	-9%	-2%	+7%	3.16	1.5	n.s.

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel. n.s. indicates p value greater than .05.

Table 34.
(Continued)

APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION, HOUSEKEEPING:

F-2. Housekeeping Functions

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=130)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
157.3 Clean patient's unit bathroom.	NONE	12	13.3	13	5.8	12.5	14.6	10	19.8	-9%	-14%	-5%	2.0	4.0	.01
163. Assemble surgical or obstetrical packs, e.g., linen packs, instrument packs.	NONE	13	12.1	9	10.9	12.5	14.6	13	10.7	-4%	0	+4%	2.33	3.0	n.s.

---

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.

n.s. indicates p value greater than .05.

Table 35. APPROPRIATE LEVEL, FREQUENCY OF TASK PERFORMANCE BY CATEGORY OF PERSONNEL, PERCENTAGE DIFFERENCE IN FREQUENCY OF TASK PERFORMANCE BETWEEN CATEGORIES OF PERSONNEL AND CRITICALITY WITHIN THE FUNCTIONAL AREA OF ADMINISTRATION, COORDINATION, HOUSEKEEPING: F-2. Housekeeping Functions (Sub-tasks)

Task	Level*	Frequency (Percent of personnel saying task is performed "daily," or "almost daily," or "several times a week.")								Percent Difference			Criticality		p**
		All Personnel (N=398)		Staff Nurse (N=137)		LVN/LPN (N=[illegible]0)		Nurses Aide (N=131)		RN Versus		LVN Versus			
		Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	LVN/LPN	Aide	Aide	Score	Rank	
157.0 Clean patient's unit:															
157.1 Furniture.	NONE	1	27.9	1	14.6	1	37.7	2	32.1	-23%	-17%	+6%	1.83	2.5	.001
157.2 Room.	NONE	2	23.9	2	11.7	2	27.7	1	32.8	-16%	-21%	-5%	1.83	2.5	.001
157.3 Bathroom.	NONE	3	13.3	3	5.8	3	14.6	3	19.8	-9%	-14%	-5%	2.0	1.0	.01

*Appropriateness of task to category of personnel as determined by the National Advisory Committee.

**Level of significance for Chi-square computed on 2x3 tables comparing frequency of task performance by category of personnel.
n.s. indicates p value greater than .05.

Table 36.

RANGE OF FREQUENCY OF PERFORMANCE AND RANGE OF CRITICALITY SCORES RANK-ORDERED BY NURSING AREA

Nursing Area	Range of Frequency of Performance	Rank	Nursing Area	Range of Criticality Scores	Rank
B-1. Patient Protection	85.0%	(1)	C-1. Patient Need for Food and Fluids	3.67	(1)
B-4. Patient Need for Movement	84.6%	(2)	D-1. Treatments and Procedures	2.67	(2.5)
D-4. Diagnostic Activities	80.4%	(3)	F-1. Administration and Coordination	2.67	(2.5)
C-2. Patient Need for Elimination	75.4%	(4)	B-1. Patient Protection	2.34	(4)
C-1. Patient Need for Food and Fluids	73.3%	(5)	B-2. Personal Hygiene and General Comfort	2.33	(5)
B-2. Personal Hygiene and General Comfort	72.6%	(6)	D-4. Diagnostic Activities	2.17	(6.5)
E-2. Oral and Written Communication	69.0%	(7)	E-2. Oral and Written Communication	2.17	(6.5)
D-1. Treatments and Procedures	61.6%	(8)	A-1. Diversional Therapeutic and Assistance Activities	1.84	(8)
C-3. Need for Oxygen Transport and Exchange	60.3%	(9)	E-1. Observation, Analysis, Interpretation	1.83	(9.5)
F-1. Administration and Coordination	57.0%	(10)	F-2. Housekeeping Functions	1.83	(9.5)
A-1. Diversional Therapeutic and Assistance Activities	47.7%	(11)	B-3. Religious and Spiritual Care	1.67	(11.5)
D-2. Application of Therapeutic Agents	39.2%	(12.5)	C-3. Need for Oxygen Transport and Exchange	1.67	(11.5)
F-2. Housekeeping Functions	39.2%	(12.5)	B-4. Patient Need for Movement	1.17	(13.5)
E-1. Observation, Analysis, Interpretation	36.4%	(14)	D-2. Application of Therapeutic Agents	1.17	(13.5)
D-3. Medications	31.9%	(15)	C-2. Patient Need for Elimination	1.0	(15)
B-3. Religious and Spiritual Care	10.0%	(16)	D-3. Medications	0.67	(16)

Table 37.

FREQUENCY OF MID-MOST TASK AND MEDIAN CRITICALITY SCORE
RANK-ORDERED BY NURSING AREA

Nursing Area	Frequency of Mid-Most Task	Rank	Nursing Area	Median Criticality Score	Rank
E-1. Observation, Analysis, Interpretation	81.3%	(1)	D-3. Medication	4.21	(1)
C-2. Patient Need for Elimination	69.3%	(2)	C-3. Patient Need for Oxygen Transport and Exchange	3.71	(2)
E-2. Oral and Written Communication	45.6%	(3)	B-1. Patient Protection	3.65	(3)
B-1. Patient Protection	43.7%	(4)	D-2. Application of Therapeutic Agents	3.63	(4)
C-1. Patient Need for Food and Fluids	42.9%	(5)	B-4. Patient Need for Movement	3.56	(5)
D-3. Medications	36.1%	(6)	E-1. Observation, Analysis, Interpretation	3.40	(6)
B-2. Personal Hygiene and General Comfort	32.2%	(7)	D-1. Treatments and Procedures	3.16	(7)
F-2. Housekeeping Functions	27.6%	(8)	D-4. Diagnostic Activities	3.06	(8)
B-4. Patient Need for Movement	25.1%	(9)	E-2. Oral and Written Communication	2.86	(9)
F-1. Administration and Coordination	23.1%	(10)	C-1. Patient Need for Food and Fluids	2.84	(10.5)
A-1. Diversional Therapeutic and Assistance Activities	21.9%	(11)	C-2. Patient Need for Elimination	2.84	(10.5)
D-4. Diagnostic Activities	18.1%	(12)	B-3. Religious and Spiritual Care	2.68	(12.5)
D-1. Treatments and Procedures	16.1%	(13)	F-1. Administration and Coordination	2.68	(12.5)
D-2. Application of Therapeutic Agents	15.2%	(14)	B-2. Personal Hygiene and General Comfort	2.04	(14)
C-3. Need for Oxygen Transport	9.4%	(15)	F-2. Housekeeping Functions	1.81	(15)
B-3. Religious and Spiritual Care	5.0%	(16)	A-1. Diversional Therapeutic and Assistance Activities	1.38	(16)

7. Concluding Remarks

NONNURSING FUNCTIONS

A number of tasks included in the task survey are considered by the Advisory Committee not to be the proper function of nursing personnel. Yet, in many instances, nurses perform these functions, often with relatively high frequency. Areas A and F-2 illustrate this situation. In the case of Area A, these nonnursing functions appear to provide for contact between the patient and the world outside the hospital and for his entertainment during his stay. In Area F-2, it was seen that the nonnursing functions involved routine housekeeping chores. In both cases, an argument can be made for viewing such tasks as a normal (and useful) part of the nursing day.

Two issues must be addressed, however. First, does performance of such tasks interfere with discharging other, more important duties? Do personnel *themselves* view these activities as appropriate? It was argued, for example, that performance of some housekeeping duties (presumably the duty of nonnursing personnel) could reflect a commitment on the part of nursing personnel to keeping the organization functioning smoothly. Is this the case? Obviously, more information is required.

The role of preservice and inservice curricula in this matter might be, as suggested earlier, one of *orientation* to the work place (i.e., these are some of the things nurses of all levels are called upon to do from time to time) and *perspective* (i.e., proper priorities must be applied in deciding when and under what conditions such activities are to be performed). With regard to the issue of the nurses' view of these activities, the perspective offered by curricular materials might stress that the contribution of the nurse (whatever her skill level) to patient well-being and the efficient functioning of her work unit can often extend beyond the boundaries of her formally defined role, and such extension may, under many circumstances, be quite beneficial if it does not involve her in activities beyond her competence or interfere seriously with her normal duties.

THE NURSES' AIDE

While it is the case that the Nurses' Aide is largely involved in the performance of relatively unskilled activities, in some instances, she participates in activities viewed by the Advisory Committee as appropriate to the higher skilled LVN/LPN and RN. Although the extent of her participation is much less than the other two occupations, it is often substantial (of the order of one-quarter to one-third "frequent" performance of a given "specialized" task).

There are two ways to view this state of affairs. On the one hand, such participation can be seen as a departure from appropriate standards of competence vis-a-vis particular task performance. On the other, her performance of tasks beyond the formal boundaries of her training may reflect an emergent redefinition within hospitals of the potential of the Nurses' Aide.

Given that the Aide seldom, if ever, is involved in the highly critical tasks within the hospital, and adopting the assumption that the Aide's performance is subject to supervision by more extensively trained nursing personnel, the second outlook seems more realistic, particularly in terms of curricular development. Further, a certain upgrading of the Aide's skill and responsibility would seem a likely consequence of the increasing complexity of hospital care; that is, the advent of more specialized therapeutic procedures and the inevitable increase of administrative and supervisory responsibilities tend to draw the more highly educated and specialized occupations away from full participation in activities which formerly occupied much of their workday, leaving a vacuum to be filled.

In order to assess just what upgrading of skills would be both necessary and useful, certain questions need to be posed. Is the participation of the Aide in tasks deemed appropriate to the RN and/or LVN/LPN by the Advisory Committee actually outside the scope of her responsibilities *as defined* by the hospital? The anomaly of her participation may be a function of a gap between "theory" and "practice," i.e., a failure of the *concept* of proper professional boundaries to reflect *actual* definitions of the responsibilities of the three nursing occupations in the hospital. Should this be the case, and no evidence of serious problems occasioned by the extension of the Aide's responsibilities is apparent, a clear implication exists for the formulation of curricula for the Aide.

There are other factors to be considered. Is the entry of the Aide into task areas thought to be the province of her more highly trained sisters a function of the type of hospital facility in which she is employed? That is, does it make a difference in what the Nurses' Aide does, that she is working in an acute voluntary hospital, acute proprietary hospital, or a nursing home (attached or unattached)? It is conceivable that different types of facilities face different problems in the allocation of nursing personnel in relation to the work to be done.

An additional structural feature of the hospital may be an important consideration: size. What is the pattern of utilization of the Aide in the small facility (under 100 beds) as opposed to the large facility (over 200 beds)? The staffing problems may be quite different, resulting in distinctive patterns of utilization of personnel according to hospital size.

It is possible that experience plays a role in the utilization of the Aide for tasks thought to be the function of the LVN/LPN or RN. To the extent that length of employment (both in the particular facility and overall) proves to be related to utilization of the Aide, it may be the case that on-the-job experience supplements and extends the Aide's skills such that she is, in the eyes of her superiors, capable of performing beyond the prescription of her role.

If size or type of facility does make a difference, it could then be possible to define curricula in such a way as to provide training for the Aide adapted to the needs of her place of employment. If, in fact, experience tends to account for the participation of the Aide in the duties of the LVN/LPN and RN, formal recognition of this state of affairs might be given in inservice programs which could build upon such experience with explicit and focused instruction. Further analysis of the task survey data along these lines is clearly called for.

DIFFERENTIATION OF NURSING FUNCTIONS APPROPRIATE TO ALL PERSONNEL

One of the major patterns to emerge from this preliminary analysis is the tendency of many tasks deemed the appropriate function of all nursing occupations by the Advisory Committee to be differentiated in the direction of more frequent performance by the LVN/LPN and/or Aide. For those tasks seen as the responsibility of the RN or the RN and LVN/LPN, a similar but less consistent pattern was noted.

An inference that can be drawn from these findings is that in the judgment of authoritative personnel in the hospitals surveyed, it was seen as appropriate (if not necessary) that the responsibility for many routine activities be placed on the LVN/LPN and Aide. This division of labor perhaps emerged from the ongoing adjustment of task responsibility in response to medico-technological change and increasing administrative demands. An obvious consequence of such adjustments is the freeing of the RN's time for other duties; in particular, for the performance of more specialized and critical tasks.

These patterns are consistent with the pattern of the extension of responsibility for the Aide discussed above. The implications of these patterns also reinforce the remarks on the situation of the Aide in that they suggest increasing specialization of the RN (both in terms of nursing functions and administration record-keeping) with the consequent need for the less trained occupations to frequently perform general nursing duties and step into tasks of medium criticality. (These suggestions must be tempered by the fact that the attribution of *change* in the division of labor is speculative in the absence of longitudinal data on task performance.)

The preceding three sections have dealt with certain general implications of the preliminary analysis presented in this report. The balance of this chapter will be concerned with recommendations for further analysis, and with spelling out certain problems which must be addressed in order to arrive at firmer conclusions regarding the implications of this task survey for curricular development.

THE FREQUENCY CRITERION

It is clear that the frequency of task performance is a central issue in assessing the need to include training for that task in a curriculum. What is less clear is how frequency is to be evaluated. In this report, frequency has been viewed relative to the range of frequency of performance within a given area and with respect to all personnel and the individual occupations. In this way, tasks could be ranked within those areas, providing one element of a judgment on curricular relevance. Another procedure was to consider the criticality dimension; yet another, the division of labor.

With regard to the division of labor, or differentiation (as it was called in this report), statistical significance was employed as one criterion for deciding whether a particular task was differentiated. In addition, a rule-of-thumb estimate of importance was utilized to gauge the implications of differences in frequency of performance across the three occupations.

No particular problem is encountered for those tasks revealing dramatic differences. However, many patterns were observed which were statistically significant but displayed relatively small percentage differences.

What is needed is a systematic way to interpret the import of percentage differences in frequency of performance among the three personnel categories. The procedure adopted in this report represents a first approximation.

For further analysis, the following procedures might prove useful. First, tasks might be grouped in terms of criticality score rather than nursing area. What this will accomplish is a more homogeneous grouping, in terms of which frequency of performance can be assessed relative to tasks of roughly equal importance. On the assumption that criticality is another major criterion for curriculum building, this strategy will permit the use of both criteria conjointly in a more meaningful way. This is particularly important, given the observation that criticality tends to vary inversely with frequency.

A second procedure, which could complement the first, is a regrouping of tasks by an alternative classification scheme. The scheme employed in this report was the format in which the task survey was mounted. Tasks could be reclassified in a number of different ways, e.g., specialized therapeutic procedures versus general patient care, information input (i.e., diagnostic procedures) versus information output (instructions to the patient, to personnel, concerning patient treatment), etc. It would be premature at this point to fully specify such a scheme, but the rationale may be stated. The characteristics of task performance and of the task itself may be less tied to substantive area than to such properties as focused treatment or routine care. For example, the range of frequency of performance, or criticality, or the character of the division of labor may vary more systematically with such features than with the present classification. If this is the case, assessment of frequency, criticality and other factors may become more meaningful by virtue of being made relative to particular types of tasks which cross over substantive areas. It would avoid comparing, in terms of frequency, tasks such as emptying drainage bottles and bags and inserting urinary catheters, both of which occur within the same area. In short, the principle is one of comparison within a group composed of similar tasks in order to decide priorities of training *for that category of activities.* The issue raised here is whether the present classification adequately satisfies this principle. This issue can be addressed empirically, i.e., by exploring alternative classifications, and decided on the basis of the kind of information yielded.

THE RELATIONSHIP OF FREQUENCY, CRITICALITY AND DIFFERENTIATION

The general recommendations set forth above require further evidence before they can be accepted and specified further or, of course, discarded. Such evidence would, in part, take the form of specifying more precisely the relationship among frequency of performance, differentiation, and criticality. The normative differentiation provided by the Advisory Committee proved discrepant in a large number of cases, raising the issue of how differentiation is to be assessed. It has been suggested that the actual distribution of performance be considered as a criterion of appropriate differentiation, subject to assessment of the problems that might result from that distribution relative to adequate nursing care. How might analysis proceed on this issue?

The general impression gained from the present analysis is that criticality varies inversely with frequency. The pattern appears to be that high-frequency, low-criticality tasks are differentiated toward performance by the LVN/LPN and Aide; low-frequency, high-criticality tasks tend to be differentiated toward performance by the higher skilled categories (RN or RN and LVN/LPN jointly). It may be the case that the relationship between differentiation and criticality is curvilinear or U-shaped. That is, differentiation may occur most frequently at the extremes of the criticality distribution and fails to occur, or occurs irregularly, at the middle (a zone of "indifference"). Further, the direction of the differentiation may be a function of criticality, i.e., tending toward the lower skill categories at the low end of the criticality distribution and toward the higher skill levels at the high end.

If criticality is systematically related to differentiation (in the way suggested above or in some other way), it may be assumed that criticality scores reflect factors perceived by hospital personnel responsible for allocating duties among the three nursing occupations. It is less important that the Advisory Committee judgments are often discrepant vis-a-vis actual practice, than that practice in the hospital associates skill level with the criticality of particular tasks.

It is useful at this point to recall the discussion above of alternative classification schemes for ordering nursing tasks. One proposal for regrouping tasks involved level of criticality. Assuming that criticality is tied to skill, a series of grouped tasks ordered by level of criticality would provide one procedure for establishing priorities of curricular inclusion, specified as to target groups (e.g., RN, or LVN/LPN, or Aide) or some combination of these occupations. *Within* each group (e.g., Highly Critical, Above Average, etc.), frequency may be used to further refine priorities. It may be suggested in this regard that priorities within each level of criticality be assigned inversely as to frequency. If a task is highly critical, yet infrequent in occurrence, then such a task may require *more* emphasis than more frequently occurring duties, since there is less opportunity to practice and improve upon performance. If the curvilinear relationship is found, this means that tasks in the midrange of the criticality scale are likely to be shared by all nursing personnel, thus defining a common core for all training programs (to the extent that such tasks require explicit instruction).

BACKGROUND AND STRUCTURAL VARIABLES

This chapter has already touched upon the need to examine certain background and structural variables in order to develop useful guidelines for formulating curricula. Facility type and size have been mentioned in the case of the Aide, but all three occupations should be inspected to see if there is any difference in the pattern of their performance in terms of these factors. A similar case can be made for education and experience, e.g., is there a difference in performance between two-year RNs and graduates of four-year university programs in nursing? What effect does job experience have on the types of tasks performed by the nursing occupations? Answers to these questions may provide valuable information for constructing focused preservice and inservice programs tailored to needs of particular facilities and particular kinds of personnel.

OTHER DIMENSIONS OF ANALYSIS

This report has not examined the dimensions of perceived difficulty and level of supervision. Obviously, both are relevant to many of the issues raised in this report. For example, when Aides perform tasks thought to be the duty of the RN or LVN/LPN, do they report greater supervision than for more routine tasks? Is perceived difficulty related to the judgment of criticality or to differentiation? If a task is critical but relatively easy to perform, does this relate to the pattern of frequent performance by category of personnel? Is perceived difficulty a better predictor of differentiation than criticality, i.e., does it more closely approximate the properties of tasks considered by hospital authorities in allocating responsibility? Perhaps perceived difficulty is a better criterion for inclusion in a curriculum than criticality, or, possibly, some index of the relationship between criticality and perceived difficulty may prove valuable.

The Human Interaction, Psychomotor Coordination, and Cognitive Level scales provide additional dimensions for task analysis. One obvious question to be posed is whether or not task performance by one or another nursing occupation is related to these variables. Probably of greater importance is the use of these scales to specify the performance components of the tasks themselves, i.e., the skills required to enact them competently. Such specification should be of great value for curricular design.

Resolution of these and other questions awaits further analysis. It must be stressed that the remarks presented in this report represent only an initial assessment of one segment of the available data. The results of the analysis thus far are merely suggestive and necessarily incomplete. By being suggestive, however, they prepare the way to a more exhaustive and definitive statement of findings relevant to the development of creative curricula tailored to the needs of the nursing professional and her employer.

9. Addenda for Nursing Occupational Analysis

ROSTER

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR THE NURSING OCCUPATIONS

Miss Georgeen H. DeChow, Chairman
Director, Department of Nursing, Manatee Junior College, Brandenton, Florida

Dr. Hazle W. Blakeney, Chairman
Department of Nursing, Essex Community College, Newark, New Jersey

*Miss Eleanor Carlson, Head
Department of Nursing, Morton Junior College, Cicero, Illinois

Miss Shirley Conklin, Coordinator
Registered Nursing Program, College of Marin, Kentfield, California

*Mrs. Floretta E. Cunegin, Coordinator
Nursing Program, Oakland Community College, Union Lake, Michigan

Dr. Betty L. Forest, Chairman
Department of Nursing, Quinsigamond Community College, Worcester, Massachusetts

Mr. Gerald L. Griffin, Director
Department of Associate Degree Programs, National League for Nursing, New York, New York

Mr. William F. Hartnett, Assistant Administrator for Nursing Services
Riverside Methodist Hospital, Columbus, Ohio

Mrs. Mildred Holloway, Chairman
Department of Nursing, Pierce College, Woodland Hills, California

Mrs. Crystal Lange, Associate Professor
Department of Nursing, Delta College, University Center, Michigan

*Mrs. Judy Ory, Associate Professor
California State College, Los Angeles, California

*Mrs. Sharon Reeder, Assistant Professor
University of California, Los Angeles, California

Mrs. Gerry White, Director
Nursing Education, Dallas County Junior College District, Dallas, Texas

---

*New member

LIST OF HEALTH-CARE FACILITIES SELECTED FOR NATIONAL SURVEY

BIRMINGHAM

200 Beds or More	Baroness Erlanger Hospital	Chattanooga, Tennessee
	Baptist Medical Center	Birmingham, Alabama
100-199 Beds	Jeff Anderson Memorial Hospital	Meridian, Mississippi
	St. Judes Catholic Hospital	Montgomery, Alabama
Under 100 Beds	Sam Howell Memorial Hospital	Cartersville, Georgia
	Athens-Limestone Hospital	Athens, Alabama
Extended-Care Fac.	Plantation Manor	McCalla, Alabama
	St. Luke's Nursing Home	Birmingham, Alabama

BOSTON

200 Beds or More	Peter Bent Brigham Hospital	Boston, Massachusetts
	Memorial Hospital	Worcester, Massachusetts
100-199 Beds	Faulkner Hospital	Boston, Massachusetts
	Thayer Hospital	Waterville, Maine
Under 100 Beds	Mary Lane Hospital	Ware, Massachusetts
	Falmouth Hospital	Falmouth, Massachusetts
Extended-Care Fac.	Hebrew Rehab. Center for Aged	Boston, Massachusetts
	Cambridge Nursing Home	Cambridge, Massachusetts

CHICAGO

200 Beds or More	Chicago Wesley Memorial Hospital	Chicago, Illinois
	Memorial Hospital	Kenosha, Wisconsin
100-199 Beds	Delnor Hospital	St. Charles, Illinois
	Beloit Memorial Hospital	Beloit, Wisconsin
Under 100 Beds	DeKalb Public Hospital	DeKalb, Illinois
	Bethany Brethren Hospital	Chicago, Illinois
Extended-Care Fac.	Hearthside Nursing Home	Chicago, Illinois
	Fox River Rehabilitation Center	Chicago, Illinois

DENVER

200 Beds or More	St. Mary's Hospital	Grand Junction, Colorado
	St. Luke's Hospital	Denver, Colorado
100-199 Beds	Memorial Hospital of Laramie County	Cheyenne, Wyoming
	Poudre Valley Memorial Hospital	Fort Collins, Colorado
Under 100 Beds	Alamosa County Hospital	Alamosa, Colorado
	Longmont Community Hospital	Longmont, Colorado
Extended-Care Fac.	Ivy Manor Nursing Home	Denver, Colorado
	Eventide Nursing Home	Longmont, Colorado

LOS ANGELES

200 Beds or More	Kaiser Foundation Hospital	Panorama City, California
	Santa Monica Hospital	Santa Monica, California
100-199 Beds	Morningside Hospital	Los Angeles, California
	West Valley Community Hospital	Encino, California
Under 100 Beds	Community Hospital of Gardena	Gardena, California
	Garden Park General Hospital	Anaheim, California
Extended-Care Fac.	Kaiser Extended Care Facility	Panorama City, California
	Culver City Convalescent Hospital	Los Angeles, California

SEATTLE

200 Beds or More	St. Francis Xavier Cabrini Hospital	Seattle, Washington
	Emmanuel Hospital	Portland, Oregon
100-199 Beds	St. Joseph's Hospital	Aberdeen, Washington
	Vancouver Memorial Hospital	Vancouver, Washington
Under 100 Beds	Tri-State Memorial Hospital	Clarkston, Washington
	West Seattle General Hospital	Seattle, Washington
Extended-Care Fac.	Mt. Baker Convalescent Home	Seattle, Washington
	L.C. Foss Sunset House	Seattle, Washington

TO: Survey Administrators

FROM: Mary E. Jensen, Associate Director for Nursing
Allied Health Professions Projects

Instructions for Administering Questionnaire on Nursing Occupations

Large numbers of nursing personnel limit the feasibility of administering the questionnaire to all registered nurses, licensed practical/vocational nurses, and aides/orderlies in the selected institutions. Therefore, we are asking you to administer it to personnel according to the size of the institution.

Size	Total Personnel	RN	LPN/LVN	Aide/Orderly
Fewer than 99	9	3	3	3
100-199	12	4	4	4
200 and up	15	5	5	5
Extended-Care Facilities	9	3	3	3

In the institutions with 200 or more beds, please try to select personnel from the following nursing units. When possible, in the 100-199 bed institutions, please try to secure a similar representation of personnel.

Service	RN	LPN/LVN	Aide/Orderly
Medical-Surgical	2	2	2
Pediatrics	1	1	1
Obstetrics	1	1	1
Psychiatry/Mental Health	1	1	1

It is recognized that in extended-care facilities and institutions with fewer than 100 beds, it may be impossible to administer the questionnaire to an equal number of RNs, LPN/LVNs, and aides/orderlies. In such instances, please substitute an individual from the next level down rather than decrease the total number of personnel.

INSTRUCTIONS FOR COMPLETING
SURVEY QUESTIONNAIRE

The questions to which you are asked to respond deal with your judgment in relation to the human interaction, critical tolerance, psychomotor coordination, and the cognitive level associated with each of the functions. Each question is accompanied by a scale and a definition of the scale to assist you in making these judgments.

Beginning with the Human Interaction Scale, place in the appropriate column the number of the statement which best describes the level of ability required to perform the function. Follow the instructions given to complete the three remaining scales.

Please feel free to delete or add to the function list those items that you believe are not valid or that may have been overlooked. Your response and our discussion of this survey at our September meeting will determine the desirability and necessity of administering the instrument to selected nursing educators and administrators.

Return this instrument together with the task analysis survey. Your immediate response is requested in order that we may analyze the data in time for our meeting, September 25-26.

Your wholehearted cooperation is sincerely appreciated. It is a further indication of the notable contributions you have made to the Project.

University of California, Los Angeles
Allied Health Professions Projects

TASK ANALYSIS SURVEY
BACKGROUND INFORMATION SHEET

I.D. Number _________

Please complete this information sheet now and return it to the survey administrator. The answers to these questions are of importance as we try to evaluate responses from a large number of people across the United States where educational and licensure requirements for specific tasks may be very different.

Remember, this is a confidential document, it is identified by number only, and will not be attached to your name.

1. RESPONDENT:

1.1 Position Title ______________________________

1.2 Area of Patient Care or Hospital Services, i.e., Medical-Surgical, Psychiatric, Medical Records, etc. Please specify:

____

1.3 Length of Time in Position ______________________________

1.4 Age _______

1.5 Sex (circle one) M F

1.6 Marital Status (circle one) Married Single Widowed Divorced Separated

2. PREVIOUS EXPERIENCE:

	Type		Years
2.1	______________	2.2	______________
	______________		______________
	______________		______________

3. Highest Grade Completed *Before* Entering Educational or Training Program: (circle one)

1-8 9 10 11 12 Some College Baccalaureate

Post-Baccalaureate

4. Educational or Training Program Completed: (circle the number next to your answer)

   1 – None

   2 – On-Job Training: How long? (circle one)

   2 wks. 1 mo. 2 mos. 3 mos. Longer than 3 mos.

   3 – Certificate or Diploma Program: (circle one)

   1 yr. 2 yrs. 3 yrs. or more

   4 – Associate Degree

   5 – Baccalaureate Degree

   6 – Post-Baccalaureate Degree

5. Certification, Licensure, Registration Held, i.e., C.D.A., A.R.T., O.T.R., R.N., L.V.N.

   Please specify: ______________________________

6. Yearly Income Range: (circle one)

   1 – Less than 2,000

   2 – 2,000 – 3,999

   3 – 4,000 – 6,999

   4 – 7,000 – 9,999

   5 – 10,000 or more

CONFIDENTIAL DOCUMENT
FOR RESEARCH PURPOSES ONLY

KLG:ba
6-23-69

SAMPLE PAGE OF NURSING SURVEY QUESTIONNAIRE
(Text tables show complete list of questions)

Instructions:
Please read each task and place an "X" in the appropriate box opposite it to show your answer.

	FREQUENCY How often do you do this task?					SUPERVISION How much supervision do you get for this task?					DIFFICULTY How difficult is this task?				
I. DIVERSIONAL THERAPEUTIC AND ASSISTANCE ACTIVITIES	Daily / Almost Daily	Several times a Week	Several times a Month	Several times a Year	Never / Almost Never	All the time	Most of the Time	Occasionally	Rarely	No Supervision	Routine procedure-No decisions	Several procedures-Minor decisions	Select most Suitable procedure	Establish and/or Modify procedure	Make complex decisions Little precedent
1. Read to patients.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
2. Assist and/or participate in recreational activities with patients, e.g. arts, crafts, sports, games, dances, walks.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
3. Obtain and deliver supplies for patients' entertainment or recreation, e.g. radio, TV, games.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
4. Assist and/or participate in occupational activities with patients, e.g. typing and clerical, leather work.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
5. Assist with individual and group therapy, e.g. relationships, play, ward meetings.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
6. Assist in writing letters, messages.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
7. Assist in placing telephone calls.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
8. Receive and deliver messages and/or mail to patients.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
9. Obtain and deliver items for patients' personal use, e.g. newspapers, magazines, books, etc.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
II. SAFETY AND COMFORT A. Patient Protection															
10. Count, sign for, and place patient's personal possessions in safe place.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5
11. Use precautions in administering and handling potentially dangerous agents, e.g. drugs, radioactive materials.	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5

UCLA, Div. of Voc. Educ., Nursing

INSTRUCTIONS TO NTAC FOR COMPLETING TASK ANALYSIS QUESTIONNAIRE

TO: Committee Members

The attached instructions accompanied the survey to a selected sample of nurses' aides, licensed vocational/practical nurses, and registered nurses in survey hospitals and extended-care facilities throughout the country. Survey administrators were instructed to select personnel from all clinical services according to the bed capacity of the institution.

We would appreciate your completing the document to the best of your ability. Do not attempt to answer it as you believe an aide, LVN/LPN, or RN would. Answer it, rather, as it applies to the occupation in general. Modify the instructions as follows:

1. Frequency – how often is this task performed?
2. Difficulty – no modifications.
3. Supervision – how much supervision is given in the performance of the function?

INSTRUCTIONS TO NTAC
FOR COMPLETING
SPECIAL SURVEY QUESTIONNAIRE

The questions to which you are asked to respond deal with your judgment in relation to the human interaction, critical tolerance, psychomotor coordination, and the cognitive level associated with each of the functions. Each question is accompanied by a scale and a definition of the scale to assist you in making these judgments.

Beginning with the Human Interaction Scale, place in the appropriate column the number of the statement which best describes the level of ability required to perform the function. Follow the instructions given to complete the three remaining scales.

Please feel free to delete or add to the function list those items that you believe are not valid or that may have been overlooked. Your response and our discussion of this survey at our September meeting will determine the desirability and necessity of administering the instrument to selected nursing educators and administrators.

Return this instrument together with the task analysis survey. Your immediate response is requested in order that we may analyze the data in time for our meeting, September 25-26.

Your wholehearted cooperation is sincerely appreciated. It is a further indication of the notable contributions you have made to the Project.

HUMAN INTERACTION

This scale is used to assess the level of human interaction skills in which the performer deals with recipients or respondents to the service or activity of the performer.

1. No Human Interaction – Requires no human interaction with patients or personnel.
   Example: Test urine for sugar and acetone.

2. Routine Impersonal Interaction – Requires performer to exchange impersonal information, perform impersonal services.
   Example: Record intake and output.

3. Routine Personal Interaction – Requires performer to engage in personal interaction in performance of impersonal service.
   Example: Take patient to the bathroom.

4. Personal Interaction – Requires performer to interact with recipients in personal manner to assess, instruct, persuade, or perform personal service.
   Example: Give bed bath.

5. Highly Personal Interaction – Requires performer to interact with recipients or respondents to bring about changes in behavior.
   Example: Instruct patient in learning how to irrigate colostomy.

CRITICAL TOLERANCE

This scale is used to assess the level of tolerance which can be allowed in the performance of each task without a significant loss of time, materials, equipment, patient comfort, or safety.

1. Flexible – Relatively unimportant whether the task is done a certain way or not.
   Example: Read to patients.

2. Moderate Tolerance – Is normally done within limited tolerance.
   Example: Put up side rails.

3. Average Tolerance – Deviation from prescribed methods could result in minor delays or loss of resources.
   Example: Administer enema.

4. Above-Average Tolerance – Very little tolerance may be allowed without risk to worker, patient, or equipment.
   Example: Maintain isolation technique.

5. Highly Critical Tolerance – Must be done within strict parameters to avoid irreversible loss of health or expensive equipment.
   Example: Administer intravenous medications.

PSYCHOMOTOR COORDINATION

This scale is designed to evaluate the difficulty of each task in terms of the level of manual skill required to perform the task well.

1. None – A task which requires no unique coordination.
   Example: Delivering mail to patients.

2. Gross – Some coordination is required but can normally be done well the first time.
   Example: Filling hot water bottle.

3. Moderate – Requires a little practice to master the dexterity.
   Example: Applying sterile gloves.

4. Fine – Requires eye/hand coordination that comes only after considerable practice.
   Example: Inserting urinary catheter.

5. Highly Refined – Requires a tactile sensitivity that is very difficult to achieve.
   Example: Mixing and withdrawing solutions for injection.

COGNITIVE LEVEL

This scale is to evaluate the depth of knowledge necessary to perform the task well.

1. Routine Procedure – Requires recognition of facts in performing simple procedures.
   Example: Giving a backrub.

2. Several Procedures With Minor Decisions – Requires interpretation and recall of information to perform a series of procedures to complete a task.
   Example: Making a bed.

3. Select Most Suitable Procedures – Requires the ability to solve new problems with a minimum of direction, based on past experience with similar situations.
   Example: Giving or assisting patient to take a bath.

4. Establish and/or Modify Procedures – Requires analysis of a situation or problem and the formulation of the most suitable procedure for solution.
   Example: Identifying approaches and solutions to patient needs and problems.

5. Making Complex Decisions With Little Precedent – Requires the ability to develop new methods of performance.
   Example: Devising nursing care plan.

9. Procedures Used in Developing a Curriculum for the Nursing Occupations*

For many years, the nursing profession has tried – with small success – to meet the steadily increasing health needs of the nation. At the same time, nursing has sought to attain equal footing with other professions. This paper seeks to describe a developmental model that may assist in bringing closer both of these goals.

The Allied Health Professions Project is developing the curriculum for each occupation with two main objectives in mind: establishment of core curriculum where feasible, and career lattice or career sequence possibilities. For each of the occupational areas in which AHPP is active, national surveys have been conducted to identify the actual functions performed by the workers in their respective job titles. In the AHPP surveys, the forms have been filled out by the workers themselves. This is unlike many other occupational surveys, where administrators or department heads may respond to questionnaires. Then the survey data have been compiled so as to form the bases upon which the curricula, including core possibilities and career sequences, have been developed.

The national analysis of the nursing occupations revealed that 60 percent of all nursing functions are performed by all levels of nursing personnel – the Nurses' Aide, LVN, and RN. These tasks are, in essence, the fundamentals of nursing.

The next 28 percent of the tasks comprise more complex activities, such as sterile techniques, giving medications, assisting in somatic therapies (electric and insulin shock), assisting with various treatments and examinations, identification of patient needs, interpretations of signs and symptoms, the teaching of simple health measures and procedures, and selecting the approaches to patient care. This 28 percent of nursing activities is carried out by the LVN/RN combination.

Procedures included in the remaining 12 percent of tasks in the national survey, which are identified as falling exclusively within the realm of the RN, are administrative techniques of planning patient care; assigning personnel; evaluating the quality of nursing care as well as employee performance and making appropriate adjustments in both areas; conducting educational programs for patients and employees; and utilizing complex nursing skills.

It should be emphasized that in the entire gamut of nursing activities, there are only six skills designated as "complex" and not permitted for the LVN, but assigned to the RN exclusively. These specific activities are: administration of IV medications and blood transfusions; reading fetal and cardiac monitoring devices; reading skin tests; tracheal suctioning; and nasogastric intubation.

Analysis of the educational preparation of RNs responding to the survey revealed that approximately 5 percent were Associate degree Registered Nurses; 83 percent were graduates of diploma programs; and 11 percent were Baccalaureate Registered Nurses. With this diversity of preparation, all reported performing the same functions. This would indicate that in many instances the graduates of Baccalaureate programs are not in fact operating at the higher level of performance one

---

*From Wood, Lucile, *Career Model for Nurse Practitioners*, University of California, Los Angeles, Division of Vocational Education, Allied Health Professions Project, May 1972.

would expect of a nurse who has attained a higher level of academic achievement. These survey percentages of RN respondents, incidentally, are similar to those reported for graduates of the various types of Registered Nurse programs as published in the 1969 edition of *Facts About Nursing.*[1]

Studies of nursing and nursing education are not new. As far back as 1923, Josephine Goldmark published *Nursing and Nursing Education in the United States.*[2] In this and many other studies, stress has been laid on the need for more nurses, the need for better nurses, or the need for more and better nurses, and many efforts have been made to delineate curricula to meet these needs. In many such studies, excellence has been equated with the attainment of an academic degree

In 1934 the Committee on the Grading of Nursing Schools, in *Nursing Schools Today and Tomorrow,*[3] recommended that nursing students receive a general education along with a high-quality professional education, emphasizing the Baccalaureate degree. In 1948 and again in 1953, Esther Lucile Brown and Margaret Bridgman, in their respective publications, *Nursing for the Future*[4] and *Collegiate Education for Nursing,*[5] described essentially the same problems in nursing and made similar recommendations.

In its 1965 Position Paper, the American Nurses' Association stated that the Baccalaureate degree should be the basic educational attainment of the professional nurse. A similar view was presented in 1970 in the *National Commission Study for Nursing and Nursing Education.*[6] In addition, the Commission Study advocated that the choice between distributive and episodic care be made at the time of entry into the nursing program, a proposal which stipulates the LVN as the base of the career sequence in nursing. Distributive nursing care, it will be recalled, emphasizes the prevention of disease and the maintenance of health outside an institution, while episodic care focuses on curative and restorative care for persons with diagnosed pathology.

Parenthetically speaking, one may question the advisability of requiring young persons to make such a career choice at a restrictive point in time. With the prospect of high school graduation after 11 years, at a possible age of 16, it seems premature for young prospective nursing students to be forced to specify the limits of their careers at the very start of their educational efforts. The decision about area of practice to follow could be made more reliably at the completion of the Basic Nurse Practitioner program, rather than at the entry-point of the nursing career, as was suggested in the Commission Report. The Basic Nurse Practitioner concept will be discussed later.

---

[1] American Nurses' Association. *Facts About Nursing.* New York: American Nurses' Association, 1969, p. 81.

[2] Josephine Goldmark. *Nursing and Nursing Education in the United States.* New York: The Macmillan Co., 1923.

[3] Committee on the Grading of Nursing Schools. *Nursing Schools Today and Tomorrow.* New York: National League for Nursing Education, 1934.

[4] Esther Lucile Brown. *Nursing for the Future.* New York: Russell Sage Foundation, 1948.

[5] Margaret Bridgman. *Collegiate Education for Nursing.* New York: Russell Sage Foundation, 1953.

[6] Jerome P. Lysaught. *An Abstract for Action.* (Report of the National Commission for Nursing and Nursing Education.) New York: McGraw-Hill Book Co., 1970.

Regardless of the scope of education and training, the ambitious and intelligent practitioner will be exposed to a variety of areas of practice and will find opportunities for acquiring and exercising higher levels of skill. This, in turn, affords the opportunity to make a real choice of functions, whether through broader experience, inservice training, or a return for additional education, and thus the Basic Nurse Practitioner is enabled to develop both personal competencies and professional capabilities based on a combination of education and experience.

Unlike the too-often rigidly compartmented programs of nurse education, the proposed model of nurse education based on function should provide opportunities for advancement and the development of new skills in line with abilities and interest. A schematic of the proposed program appears on the following page. It is presented not with the notion that it gives all the answers, nor is it at this point a final effort. It merely represents what seems to be a possible way for the profession of nursing to progress on the basis of some specific facts that have emerged from the studies mentioned here and from personal observations.

The development of the nursing career on the basis of nursing functions at successive stages is seen as a means of attaining true professional status for the nursing practitioner. The term "function" is used here as meaning nursing activities and their outcomes as they relate to helping an individual patient, student, or practitioner to establish an optimal relationship with the surrounding environment.

Stage I of the model is the entering curriculum in nursing. It includes the fundamental nursing skills as reflected in the AHPP national survey, plus a moderate amount of related technical and scientific information in the physical and behavioral sciences, together with a minimum of general knowledge. At this stage, the beginning nurse has an opportunity to learn and practice the basic nursing skills until a moderate competence is achieved. This stage is built on the AHPP information which indicates that 60 percent of all activities are common to all the nursing practitioners: NA, LVN, and RN. The curriculum for the entry stage comprises 36 Instructional Units incorporating the 184 activities.

These units are currently being tested throughout the country in 18 settings in various programs, including Basic Nurse Aide and Nurse Aide Staff Development programs, as the Fundamental Nursing Skills in LVN, Associate and diploma nursing programs, as well as in the Basic Health Perspective Course at Johns Hopkins Center of Allied Health.

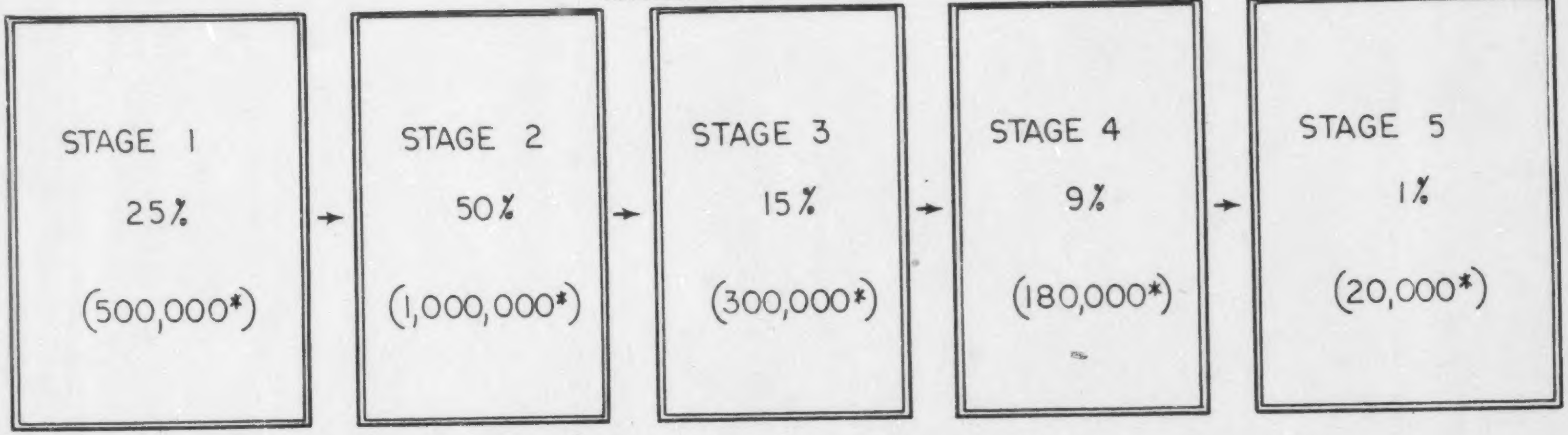
Stage II of the Career Model prepares the Basic Nurse Practitioner. Included in this stage are the remaining 40 percent of activities identified by the survey. These activities include more complex nursing skills and the beginning theoretical development relating to human functions, combined with beginning theory and practice in problem-solving, decision-making, and communication skills.

The proposed model for Stage II offers the possibilities of combining the strengths of the present LPN, Associate degree, diploma, and, in some instances, Baccalaureate curricula, to develop a competent Basic Nurse Practitioner based on function.

Why not prepare one basic practitioner who would have the necessary knowledge and skills to identify the needs of the patient, to solve problems and make decisions on the basis of possible alternatives, and to take responsibility for the outcome of such action?

CAREER SEQUENCE FOR NURSING OCCUPATIONS

STAGES OF NURSING



STAGE 1
25%
(500,000*)

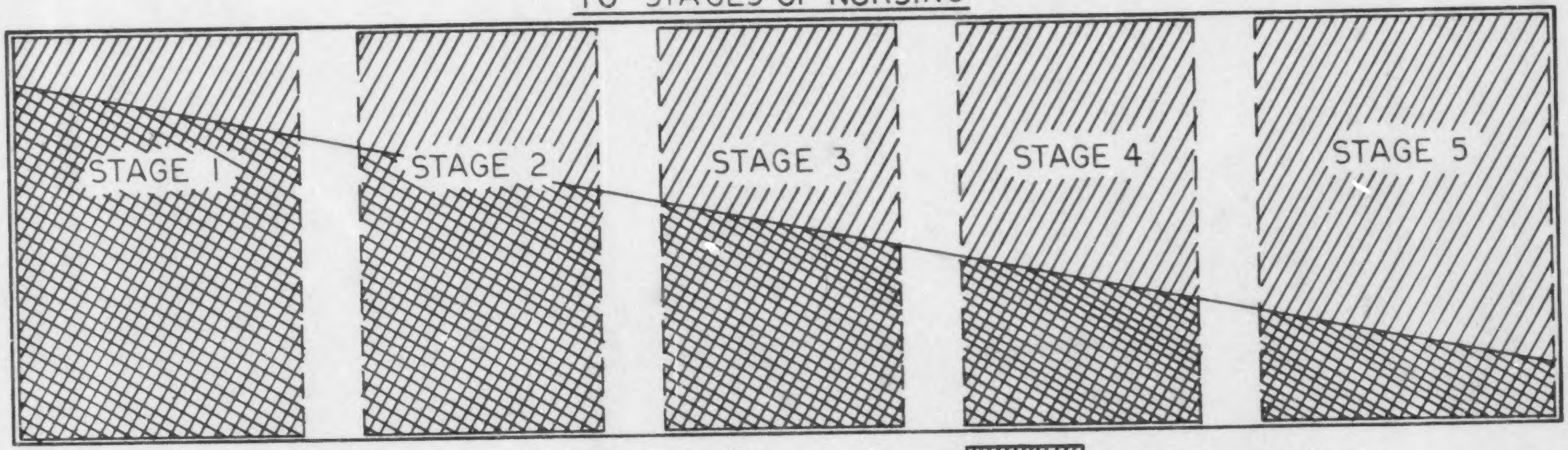
STAGE 2
50%
(1,000,000*)

STAGE 3
15%
(300,000*)

STAGE 4
9%
(180,000*)

STAGE 5
1%
(20,000*)

KNOWLEDGE/SKILLS RELATIONSHIP TO STAGES OF NURSING



▨ = KNOWLEDGES
▩ = SKILLS

*PREDICATED ON BASIS OF TOTAL
NURSING POPULATION OF 2,000,000

AHPP 3·72

LAW/JKH

If this Basic Nurse Practitioner (the familiar descriptive titles are avoided) could become the Stage II in the nursing career sequence, then it would be necessary to have only one nurse practitioner license. This would help eliminate the disagreements within nursing over the terms "technical" and "professional," and the various licensed titles in nursing (LPN and RN). If the nurse practitioner elected to advance in the career sequence, it would be because he or she wanted to change function in the setting.

Stage III of the model would provide the beginning skills and knowledge to teach, administer, or consult in a specialty area. In addition to increased theoretical knowledge in the specialty area, the student would acquire knowledge of basic administrative and educational methodologies. Stage III graduates could be employed as beginning faculty for the entry stage and nurse practitioner programs (that is, Stages I and II of the Career Model) or in beginning administrative positions in health agencies. In the time devoted to attain it, the present Baccalaureate degree may be comparable to the proposed Stage III. However, it is not at all certain that two years are needed to complete this phase.

If one's aim is to prepare a nurse to function at a certain stage, a degree may or may not be necessary. At this point, the question is debatable. As a case in point: after completion of the Stage II Basic Nurse Practitioner curriculum, the individual may desire to take one of several additional courses to increase knowledge and skills in a specific area; e.g., critical-care nursing, inhalation therapy, pediatric nurse assistant or associate, etc. These courses could result in certification or recognition in the specialty area apart from a degree. This recognition could also be granted through the Academy of Nursing, as proposed in the Commission Report.[7]

It is possible to foresee a time when practitioners in all the clinical therapies can proceed through the Nursing Stages I and II curricula and then move into another area. Wouldn't it be of great benefit to the patient to have all of the clinical therapy practitioners well grounded in basic nursing skills? And wouldn't it save nursing a great deal of time now spent in trying to define what nursing is all about? With this model, nursing could provide higher quality service to the patients and, at the same time, attain professional stature.

Stage IV in the model would prepare teaching faculties for the Stages II and III programs, as well as administrative personnel for the large medical centers and health agencies. Beginning research methodology would be offered at this point in the curriculum. This is necessary so that these graduates could become strong supporters of research in nursing, and could serve to identify clinical nursing problems for research. The curriculum at this stage would be of an advanced academic nature, including teaching and administrative techniques which would be applied specifically to the areas of nursing education and nursing practice.

In other words, the Stage IV curriculum would not at this time include high-level nursing theory. However, this would be a strong possibility for some future date, when the profession of nursing has a well-developed body of scientific nursing knowledge. Such knowledge would be attained when the next stage of this model is truly realized with all its ramifications.

---

[7] Lysaught, *op. cit.*

The Stage V curriculum would prepare nurse researchers and would be on a level with the present Doctoral programs. The function of these graduates would be to spend time and effort on nursing research for the development of a scientific body of nursing knowledge. As is well known, it is in this one area that nursing falls behind other professions.

Such a body of nursing knowledge could improve the quality of nursing practice by setting up a system of assessing and analyzing patient needs and selecting appropriate courses of action. This would assure the patient of high-level expert nursing intervention which would assist him in retaining or regaining his optimal stage of health, or meeting death with lessened fear.

These conclusions are based upon the observations of the UCLA Allied Health Professions Project and other recent nursing investigations: The Commission Report; the California Bureau of Public Health Nursing's response to ACR 195;[8] the two recent volumes of *Nursing Reconsidered* by Esther Lucile Brown;[9] and present efforts throughout the country to revise Nurse Practice Acts. It seems timely to propose a model of nursing based on functions of the nurse practitioner. In the final outcome, this may or may not be accompanied by an educational degree or degrees.

The five-step proposal presented here is seen as a sound method for developing nurse practitioners who could give nursing care in any agency. More important, each stage would include increasing and cumulative areas of competence in nursing practice, in decision-making, in problem-solving, and in administrative, teaching, and communication skills. In actual practice, everyone in nursing already is expected to set priorities, to solve problems, to be accountable for decisions, and to teach health practices to the patient, relatives, and friends in the community. It seems imperative, therefore, that these skills and knowledge be offered at every stage of the nursing curriculum. Each stage of the curriculum would build on the content of the previous stage, with more complex theoretical content added at each succeeding stage.

Let us briefly review the stages of practice based on function as outlined in this model and, with this, present an estimation of the percentage of representation in the total nurse population of each stage.

1. Stage I would prepare the entry-level nursing practitioner in the fundamentals of nursing. This group would make up 25 percent of the nursing practitioners.

2. Stage II would prepare the Basic Nurse Practitioner who would carry the bulk of the direct nursing services to the patient. This group would comprise 50 percent of the total nursing work force.

3. Stage III would prepare the beginning nurse educator, administrator, or consultant in a specialty area. This group would represent 15 percent of the nursing population.

---

[8] California Bureau of Public Health Nursing. *A Report to the 1971 Legislature on Levels and Combinations of Skills for the Nursing Professions Pursuant to the 1970 Assembly Concurrent Resolution 195.* Berkeley: California State Department of Public Health, February 8, 1971.

[9] Lucile Esther Brown. *Nursing Reconsidered. Part I: The Professional Role in Institutional Nursing; Part II: The Professional Role in Community Nursing.* Philadelphia: J.B. Lippincott Co., 1971.

4. Stage IV would prepare the teaching facilities for the midlevel programs as well as the nursing administrators for the large medical centers and other health agencies. Nine percent of the nursing population would be needed to fill these pivotal positions.

5. Stage V would prepare the nurse researcher. If 1 percent of the nursing population could be engaged in nursing research, a vast improvement in clinical and other nursing practice could be anticipated within the next one or two decades.

The results of the application of a model of nursing based on function would:

1. Prepare better nursing practitioners at each stage.

2. Permit widely differing functions at each stage, which would more precisely define curriculum content and the ultimate utilization of personnel.

3. Eliminate the present conflict among the various stages of nursing practice, from the NA to the Ph.D.

4. Permit a basic nursing license based on function, and provide a means to continue education at any time that needs and desires produced a change in career goals.

5. Avoid duplication and overlapping of content, probably shortening the time needed to achieve a given stage of practice. Although the length of time might be diminished, we could logically expect a better equipped performer of nursing practice and one with a sound base of theoretical knowledge.

It should be emphasized that no easy application of the model is foreseen. It does, however, provide a structure which nursing and its affiliated disciplines could use as a frame of reference in working out solutions for specific areas of difference.

No reference has been made to the setting in which the educational process could take place, e.g., a college, adult education, clinical agency, correspondence course, extension course, or by television. This omission is intentional. It seems clear that *all* available sites must be utilized for maximum efficiency and effectiveness, and the selection of setting is left open to the educational planners and providers.

Another and a considerably more knotty problem that must be worked out is that of transferability of credit from one setting to another as well as from one stage of the model to succeeding stages. A workable solution to this problem alone will serve to speed up the preparation of nurse practitioners in order to meet mounting health requirements.

References to present job titles and current categories of nursing practitioners have been avoided, since differentiation must be decided upon by the nurses themselves. It is very probable that present designations will be altered significantly with implementation of the proposed five-stage sequence.

The time dimension for completion of the instruction comprising each stage also has been open-ended. If, in fact, we are committed to individualized learning, we must permit individuals to progress at their own rates of speed. Thus, the time dimension will become a relative matter, based upon successful performance by the learner.

Licensure and/or certification policies and procedures also will require modification through the cooperation of nursing practitioners, educators, and legislators if nursing is to meet the ever more pressing demands for nursing services.

In short, the major elements of educational setting, titles, transferability of credit, time, and licensure have been left open for discussion and compromise among all nursing practitioners and their affiliated disciplines.

In closing, if this model were adopted, we could expect nursing practitioners to present themselves for employment with predictable capabilities; that is, any practitioner reaching Stage II could be expected to perform at a predetermined level of proficiency. Likewise, if a practitioner has reached a particular stage in education, then he or she would know exactly what his or her level of capability was because classification is based on function. Both the practitioner and the hiring agency would be immediately aware of the position in which the person could competently function. Such an approach would realistically utilize each and every member of the nursing work force, directing their efforts toward providing high-quality nursing care.

10. Procedures Used in Developing Instructional Materials to Implement the Curriculum for the Nursing Occupations

In writing the instructional modules, an effort has been made to be innovative while providing a sound educational basis for this program. AHPP has endeavored to simplify (but not water down) content in the following manner by:

1. Specifying the skill (activity or task) to be learned.
2. Subdividing the skill into major steps to be learned.
3. Supporting the practical content with related theory which will clarify the major steps, e.g., factors which make or break the successful attainment of the skill; safety precautions; points for making the step easier to do (special timing, special handling or positioning, special sequence of action); related biological concepts or principles of microbiology, where applicable; communication and human relations skills needed for successful completion of the activity; pertinent ethical or legal concepts.
4. Planning the learning sequence:
    a. Demonstration or film introducing the unit.
    b. Study of the Instructional Unit, followed by written post-test (no grade).
    c. Practice in learning lab, taking performance examination (pass/fail).
    d. Supervised clinical practice with periodic evaluation checks.

> NOTE: Various combinations of audiovisual/tutorial aids are utilized. The intent is to provide alternative media suggestions which will enable the users to adapt these materials to their present systems. In other words, some of the materials may be prepared for presentation via several types of adaptable media, i.e., student manuals, filmstrip, 8mm, cassette packaging, etc.

Six writer-consultants who are experienced nursing educators and/or nursing practitioners were recruited in June 1970 to assist in the development of the Stage I Instructional Units. It was the objective of the writers to make sure that the learner attains knowledge, skills, and a change of attitude at the performance stage designated by the Instructional Module. A module is here defined as that small portion of an Instructional Unit which can stand alone. It incorporates the important steps, key points, and related information as needed to develop the task or activity to be learned.

It is believed that learning is an active process and, therefore, that the student must be "actively doing." The instructor functions chiefly as facilitator of learning.

As the entire project progressed, the respective Associate Directors expected that certain Instructional Units being developed might become "common core units" which could be used in any one or all of the allied health occupations. If this was possible, an overall curriculum design could become dynamic and open-ended, permitting the learner to go in any one of a variety of directions (horizontal, vertical, or a combination of both) as desired. Workers could thus be retained in the health field because they would no longer find themselves in a self-limiting or dead-end occupation.

Component modules may be used in a variety of settings: acute-care facilities, extended-care facilities (ECF), home health agencies, agency inservice programs, adult educational programs, vocational and Associate degree nursing programs. For this reason, it is believed that a certain standardization of practice may result. The specific sequencing of content will remain within the purview of the respective instructors of the faculty.

The consultant group of nursing writers was employed to develop the Instructional Units for Stage I and Stage II. The AHPP staff spent considerable time conferring with the writers, most of whom had difficulty working from this new approach. In an effort to make the job easier and provide them with some structure, it was requested that they first establish behavioral objectives (general and specific) for the Instructional Unit, and then do a job breakdown on the procedures they were developing for each unit. The format required them to outline the important steps in each performances sequence of the procedure. Once this was accomplished, each step was then amplified by listing key points to clarify each important step. These key points helped the writers to integrate with the skills being taught the related anatomical and biological principles, microbiological concepts, communication skills, legal, ethical, and safety guidelines, as well as elementary problem-solving approaches. This method proved useful because it established a systematic approach for developing instructional materials, thus making it imperative to eliminate extraneous material. In order to provide the students with a clear understanding of the purpose of each activity, as well as the ability to attain the established objectives, related information was incorporated in the Instructional Unit where applicable.

When the writers had completed these initial steps, it became easier to prepare the written tests and performance tests, all of which were correlated with the entire unit content as well as with the performance objectives.

It is important to note that the 184 tasks found by the AHPP survey to be common to all practitioners of nursing (i.e., the basic nursing skills) were combined into a series of 36 Instructional Units for Stage I. It should also be pointed out that even though the student may plan to become a Basic Nurse Practitioner, she must be skilled and knowledgeable in the basic nursing skills before she proceeds to Stage II and then to Stage III, which are progressively more complex in nature. The remaining 122 tasks defined in the nursing survey are combined into a series of approximately 17 Instructional Units for Stage II.

Although the project methodology prescribes curriculum development on the basis of tasks determined by the national survey, this in no way precludes the addition of other information deemed essential by instructors, nor the incorporation of information resulting from newly developed technologies. Allowance is also made for deletion of obsolete methods and procedures as they are replaced by newer ones.

The sequencing of instructional units has been established on the premise of progression from the simple to the complex.

Detailed review and editing of the materials were undertaken to verify facts and assure clarity and consistency of style. Performance checklists were devised for the purpose of assisting the teachers to observe whether the students had attained the identified behavioral objectives.

After the manuscripts had been reviewed and edited, they were typed and reproduced in draft form at the project office for use in a pilot testing program.

EVALUATION OF INSTRUCTIONAL MATERIALS

The site selected for the initial testing was St. John's Hospital, Santa Monica, California. The AHPP staff entered into a close working relationship with the nursing administration there.

The initial testing program began on November 15, 1970, with 17 students enrolled in the class. Although one dropped out after the first day because she was unable to make satisfactory baby-sitting arrangements, the remaining 16 students successfully completed the 8-week program. (In St. John's Hospital's previous traditional Nurse Aide classes, the dropout rate was approximately 30 percent.) The selection process was carried out by the hospital in its usual manner. It is gratifying to report that all 16 students were still employed at St. John's after more than three months of "monumentally successful" educational experience. The usual retention rate for St. John's Nurse Aides is about 70 percent after three months' employment.

Since completion of the pilot Nurse Aide program, St. John's Hospital has utilized the Instructional Units in five consecutive courses. Several members of the original class still are employed at St. John's. Several graduates have enrolled in RN programs. One graduate has reported that she successfully challenged the Fundamental Nursing I course in an Associate degree program.

Some of the positive factors emerging from the program were:

1. High motivation demonstrated by both the students and the faculty, as evidenced by the increased performance capabilities of the students and faculty.

2. More rapid assimilation of the materials with higher performance abilities than among students from previous programs conducted by St. John's Hospital.

3. More individualized instruction time available to devote to students because of the utilization of the learning materials.

4. Continuing motivation demonstrated immediately by the fact that six of the graduates applied to RN schools for the fall of 1971.

5. Unusually low attrition rate: 16 out of 17 students (94 percent) successfully completed the course, as compared with 70 percent in the previous course.

6. Better observation of patients and more accurate and immediate reporting of patient problems than was the case with earlier graduates.

7. Favorable comments offered by Supervisors of Nursing on all aspects of performance. They emphasized how much better this group performed in comparison with earlier groups, and wanted to know what change in training was responsible for the superior outcome.

8. Questions from previous Nurse Aide graduates as to why the instructors gave this class so much more information, and why the class participants were such capable performers.

9. Frequent requests from pilot program students for additional clinical assignments when their scheduled lessons were completed.

10. Limited permission to allow students to move at their own rate of speed. (This is expected to be more practicable in future programs, because initial experience has permitted more preplanning to allow for students' varying rates of progress.)

In addition to the instructional manuals described, a series of slide films accompanied by tape cassettes were developed in cooperation with Mt. San Jacinto Community College.

The following titles were completed and are available from the college:

I. Body Mechanics

   A. Static Positions and Walking
   B. Body Mechanics for Health Workers
   C. Body Mechanics for the Patient

II. Aging Process

   A. Elderly Patient in the Home Setting
   B. Elderly Patient in the Acute-Care Setting
   C. Elderly Patient in the Extended-Care Facility

III. Fundamentals of Legal and Ethical Aspects of Health Workers

   A. Introduction to Ethics in the Healing Arts
   B. Introduction to Legal Aspects in the Healing Arts

CHAPTER III. RESULTS

A. AHPP ACTIVITIES

COMMITTEE MEETING REPORTS

Nursing

Report of First Meeting of the National Technical Advisory Committee for the Nursing Occupations, December 3-4, 1968.

Report of Second Meeting of the National Technical Advisory Committee for the Nursing Occupations, September 25-26, 1969.

Report of Third Meeting of the National Technical Advisory Committee for the Nursing Occupations, June 17-18, 1971.

Prosthetics-Orthotics

Report of the Joint Educational Advisory Committee of the American Orthotic and Prosthetic Association and the American Board for Certification in Prosthetics and Orthotics, Washington, D.C., January 30-31, 1969.

Report of Second Meeting of the Joint Educational Advisory Committee of the American Orthotic and Prosthetic Association and the American Board for Certification in Prosthetics and Orthotics, Miami Beach, Florida, October 11, 1969.

Biomedical Photography

Report of Meeting of National Advisory Committee for Biomedical Photography, April 21-22, 1969.

Electroencephalographic Technician

Report of Meeting of National Technical Advisory Committee for Electroencephalographic Technicians, July 6-9, 1969.

Hospital Food Service Workers

Report of Meeting of National Technical Advisory Committee for Education of Food Service Workers, August 11-12, 1969.

Occupational Therapy

Report of Meeting of National Technical Advisory Committee for Occupational Therapy, July 2-3, 1969.

Hospital Pharmacy

Report of Meeting of National Technical Advisory Committee for Purchasing, May 26-27, 1969.

Radiologic Technology

Report of Meeting of National Technical Advisory Committee for Radiologic Technology, May 1-2, 1969.

Hospital Social Service

Report of First Meeting of National Technical Advisory Committee for Social Service Occupations, May 8-9, 1969.

Report of Second Meeting of National Technical Advisory Committee for Social Service Occupations, July 10-11, 1969.

Respiratory Care/Inhalation Therapy

Report of Meeting of National Technical Advisory Committee for Respiratory Care/Inhalation Therapy, April 9-10, 1970.

Dental Auxiliary Occupations

Report of Meeting of the National Technical Advisory Committee for Auxiliary Dental Occupations, September 22-23, 1969.

Medical Records Occupations

Report of Meeting of National Technical Advisory Committee for Medical Records Occupations, April 3-4, 1969.

National Advisory Committee

Report of First Meeting of the National Advisory Committee for the Allied Health Professions Project, September 13, 1968.

Report of the Second Meeting of the National Advisory Committee for the Allied Health Professions Project, January 9, 1971.

Meeting of the Allied Health Professions Project Staff and the League for Innovation in the Junior Colleges, November 20, 1968.

PUBLICATIONS FOR THE CLINICAL OCCUPATIONS

(Task inventories marked with an asterisk indicate that they are included in *Allied Health Professions Project Task Inventories*, a separate publication. Individual task inventories are not available.)

Bioelectrical Monitoring

*Electroencephalographic Technician Task Inventory**
Electroencephalographic Technician Occupational Analysis Report

Biomedical Photography

*Biomedical Photography Task Inventory**
(no further publications scheduled)

Clinical Laboratory Technician

*Clinical Laboratory Task Inventory**
Clinical Laboratory Occupational Analysis Report
A Model of Individualized Instruction for Clinical Laboratory Occupations

Instructional Materials:

Unit 1. *Introduction to Clinical Measurements*
Unit 2. *Specimen Processing*
Unit 3. *Media Preparation*

Dental Auxiliary

*Dental Auxiliary Task Inventory**
Dental Auxiliary Occupational Analysis Report
Fundamental Dental Laboratory Procedures (3 instructional modules)
Dental Hygiene: Detection and Removal of Calculus (5 modules)
(available from Reston Publishers, Division of Prentice-Hall, in spring 1973)
"Pouring Dental Casts," 15-minute super 8-millimeter cartridge sound motion picture
(available from Comprenetics, Inc., L.A.)

Medical Assistant

Gastroenterology Assistant Occupational Analysis Report
The Gastroenterology Assistant: A Laboratory Manual
(available from Charles C. Thomas, Publishers)
Physician's Assistant Survey Report

Nursing Occupations

*Nursing Task Inventory**
Nursing Occupational Analysis Report
A Career Model for the Nurse Practitioner (Curriculum)
Stage I Nursing Curriculum (16 units)
(available from W.B. Saunders Co. as *Nursing Skills for the Allied Health Services*, Volumes 1 and 2)
*Community Health Nursing Task Inventory**

Orthotics

A Manual of Lower Extremities Orthotics
(available from Charles C. Thomas Publishers)

Radiologic Technology

*Radiology Task Inventory**
Radiology Occupational Analysis Report

Respiratory Care/Inhalation Therapy

*Respiratory Care/Inhalation Therapy Task Inventory**
Occupational Analysis for Respiratory Care/Inhalation Therapy

Social Services

*Social Service Task Inventory**
Occupational Analysis of Social Services in Medical Care Facilities

PUBLICATIONS OF THE SUPPORTIVE OCCUPATIONS

(Task inventories marked with an asterisk indicate that they are included in *Allied Health Professions Project Task Inventories*, a separate publication. Individual task inventories are not available.)

Hospital Admitting Office

*Admitting Office Task Inventory**

Hospital Business Office

*Business Office Task Inventory**

Hospital Central Service

*Central Service Task Inventory**

Hospital Engineering Maintenance

*Engineering Maintenance Task Inventory**
Engineering Maintenance Occupational Analysis Report

Hospital Environmental Sanitation

*Environmental Sanitation (Health-Care Facility) Task Inventory**
*Environmental Sanitation (Public Health) Task Inventory**

Hospital Food Service

*Food Service Task Inventory**
Food Service Occupational Analysis Report

Hospital Housekeeping

*Housekeeping Task Inventory**

Hospital Housekeeping

*Housekeeping Task Inventory**

Hospital Laundry and Linen

*Laundry and Linen Task Inventory**

Medical Office Assistant

*Medical Office Assistant Task Inventory**
Medical Office Assistant Occupational Analysis Report

Medical Records

*Medical Record Department Task Inventory**
Medical Record Department Occupational Analysis Report

Medical Record Instructional Units:

Filing (Terminal Digit and Alphabetical)
Medical Record Content, Assembly, and Check
Medical Record Terminology:
  Circulatory System (text)
  Circulatory System Audio Tape Cassette
  Digestive System (text)
  Digestive System Audio Tape Cassette
  Respiratory System (text)
  Respiratory System Audio Tape Cassette
  Musculoskeletal System (text)
  Musculoskeletal System Audio Tape Cassette
  Genitourinary System (text)
  Genitourinary System Audio Tape Cassette
  Nervous System (text)
  Nervous System Audio Tape Cassette

Hospital Pharmacy

*Pharmacy Task Inventory**
Hospital Pharmacy Occupational Analysis Report

Hospital Purchasing

Purchasing Occupational Analysis Report
Health-Care Facility Purchasing, Unit 1 (7 Instructional Modules)

Hospital Ward Administration

*Ward Administration Task Inventory**
Ward Administration Occupational Analysis Report

PUBLICATIONS FOR THE SECONDARY SCHOOLS ALLIED HEALTH PROJECT

Evaluative Report on Phase I of the Secondary Schools Project for an Introduction to the Allied Health Professions Project

Evaluative Report on Phase II of the Secondary Schools Project for an Introduction to the Allied Health Professions Project

A New Source of Manpower (informational brochure)

Secondary Schools Allied Health Professions First-Year Curriculum
Teachers' Manual
Students' Manual

Program Guide – A Guide for Development and Operation of a Secondary School Allied Health Career Program

Student Training Record Booklets *(Nursing, Central Service, Hospital Business Office, Physical Therapy Aide, Inhalation Therapy Aide, Personnel Training, Refrigeration and Air-Conditioning, Pharmacy Technician, Occupational Therapy Aide, Social Worker Aide, Radiology Aide, Clinical Laboratory Assistant)*

"Comparative Medical Practices," set of eighty 2- by 2-inch color slides

MISCELLANEOUS PUBLICATIONS

Allied Health Professions Project Task Inventories (spiral-bound)
Contains inventories for Biomedical Photography, Central Service, Clinical Laboratory, Community Health Nurse, Dental Auxiliary, Electroencephalography, Engineering Maintenance, Food Service, Admitting Office, Business Office, Housekeeping, Laundry and Linen, Medical Office Assistant, Medical Records, Nursing, Pharmacy, Purchasing, Radiology, Respiratory Care/Inhalation Therapy, Sanitation (Health-Care Facility and Public Health), Social Service, Ward Administration.

The UCLA Allied Health Professions Project: The Background, The Programs, The People, January 1970 (informational brochure)

Clinical Instructor Training Program Trainer's Manual, 1970
(available in English, Spanish, and Japanese)

Clinical Instructor Training Program Final Report, 1972

EDUCATIONAL ACTIVITIES

An important aspect of the mission of the program was to conduct teacher-training institutes to instruct teachers in the effective use of the curricular materials produced by the project. In addition, staff members made presentations at meetings and conventions of organizations concerned with the occupations on which they were working. A list of these meetings follows:

American Society of Hospital Pharmacists, Washington, D.C., January 13-15, 1969; Mr. Robert Henrich, "Assistants in the Health Professions."

Southwestern Clinical Pharmacy Seminar, Tucson, March 14-16, 1969; Mr. Robert Henrich, "Assistants in the Health Professions."

American Association of Dental Schools, Chicago, March 14-16, 1971; Mrs. Anna Pattison.

International Association for the Advancement of Medical Instrumentation, Los Angeles, March 15-16, 1971; Dr. Thomas Freeland.

11th Annual National Two-Year College Chemistry Conference, March 17, 1971; Mr. Howard Taub.

Third Annual Grossmont College Conference on Biomedical Technology, San Diego, March 22, 1971; Dr. Katherine Goldsmith.

National Clinic on Technical Education, Oklahoma City, March 24-26, 1971; Dr. Miles H. Anderson, "Allied Health Professions in the 21st Century."

Sixth Annual Meeting and Conference on Effectiveness of On-Line Biomedical Computing, Association for the Advancement of Medical Instrumentation, Los Angeles, March 21, 1971; Dr. Thomas Freeland, "Wherewithal – Core Curriculum."

National Convention of American Medical Records Association, Chicago, October 23, 1971; Dr. Miles H. Anderson, "Problems of In-Service Training in Hospital Medical Records Departments."

National Convention of Society of Nuclear Medicine Technologists, Chicago, October 28-30, 1971; Dr. Miles H. Anderson, "Clinical Instructor Training."

American Vocational Association, National Convention, Portland, Oregon, December 7, 1971; Dr. Miles H. Anderson, "Development of Instructional Materials Through Research."

California Association of Medical Office Assistant Instructors, Annual Meeting, Los Angeles, October 2, 1971; "Medical Office Assistant Occupational Analysis."

American Association of Inhalation Therapists, Philadelphia, November 17-19, 1971; Dr. Thomas Freeland, "Occupational Analysis Techniques."

National League for Nursing Seminar, Las Vegas, October 25-27, 1971; Mrs. Lucile Wood, "Allied Health Professions Project Nursing Curriculum."

Conference on National Commission for the Study of Nursing and Nursing Education, Los Angeles, November 30, 1971; Mrs. Lucile Wood, "Meaningful Change: A Functional Nursing Model."

Joint Health Venture Group, Los Angeles, March 22, 1972; Dr. Thomas Freeland, "Health Manpower Problems and Perspectives."

Rotary Club, Camarillo, California, March 29, 1972; Dr. Thomas Freeland, "Health Manpower Problems and Perspectives."

California Association of Medical Laboratory Technologists, Los Angeles, March 23, 1972; Dr. Miles H. Anderson, Mr. Howard Taub, "Clinical Instructor Training" and "Career Model in Medical Laboratory Technology."

National League for Nursing, Western Directors of Nursing, Seminar on Manpower Development, Denver, March 12-15, 1972; Mrs. Lucile Wood, "Nursing Career Model."

South Dakota State Department of Health, Workshop, "Career Model Development for Health Manpower Training," Rapid City, September 14-16, 1972; Dr. Miles H. Anderson, Dr. Thomas Freeland, Mrs. Lucile Wood, Mr. Howard Taub, principal faculty.

Joint Meeting of Allied Health Committees of The Hawaii Regional Medical Program, The Comprehensive Health Planning Commission, and The Social Welfare Manpower Education Council at the University of Hawaii, Honolulu, July 28, 1972; Dr. Miles H. Anderson, "Planning for Allied Health Professional Training."

California Society for Hospital Personnel Administration, San Francisco, October 25, 1972; Dr. Miles H. Anderson, "Task-Oriented Instruction."

American Occupational Therapy Association Annual Conference, Los Angeles, October 26, 1972; Dr. Miles H. Anderson, "Task-Oriented Instruction."

Articles in journals:

Article published in *California School Boards*, April 1971, on Secondary Schools Allied Health Professions Project.

Article published in *American Vocational Association Journal*, April 1971, on Allied Health Professions Project.

Mrs. Lucile Wood, M.S., R.N., Associate Director for Nursing, made the following presentations on *A Career Model for Nursing Practitioners:*

April 6, 1972, San Fernando In-Service Nursing Training Directors, Los Angeles.

April 25, 1972, Los Angeles Extended-Care Facility Conference Group.

May 6, 1972, Nursing Instructional Staff, St. Luke's Hospital Nursing School, Cedar Rapids, Iowa.

May 8, 1972, Laramie County Community College Health Occupations Faculty, Cheyenne, Wyoming Commission for Nursing; also, Denver Community College Faculty for Nursing.

May 17, 1972, Deaconess Hospital School of Nursing Faculty, St. Louis.

June 26, 1972, faculties of schools of nursing from community colleges in Great Bend, Wichita, and Liberal, Kansas.

July 31, 1972, study group from Montefiore Hospital and Lehman College, New York City.

Association of schools of Allied Health Professions Annual Convention, Houston, Texas, November 16, 1972; Dr. Miles H. Anderson, "The Secondary Schools Allied Health Professions Project Program."

B. SUMMARY OF RESULTS

OCCUPATIONAL ANALYSES

A STUDY OF THE ELECTROENCEPHALOGRAPHIC TECHNICIAN'S OCCUPATION – It was the purpose of this report to review the results of a nationwide survey which was conducted in order to ascertain the specific tasks comprising the Electroencephalographic Technician's (EEG) occupation. This was based on the belief that a knowledge of these particular tasks would aid in the development of a relevant and meaningful educational program for the EEG Technician.

The opinions of four different populations were sampled: (1) members of the National Technical Advisory Committee for EEG Technician Training Programs; (2) subscribers to the American Journal of EEG Technology; (3) members of the American Electroencephalographic Society (AES); and (4) a national sample of technicians working in selected hospitals and extended-care facilities.

Of the 197 questionnaires distributed, 59.3 percent were returned (118) and were tabulated by the Survey Research Center, University of California, Los Angeles. The data collected on selected background variables confirmed the opinion of authorities in the field. It should be noted that the ages of the persons in the samples indicated by the mean and the standard deviation were somewhat higher than anticipated. Also, 10 percent of the technicians reported that they were earning $10,000 or more.

The differences in the mode category selected were reported for each sample, and also for a combination of R.EEG.T.'s and nonregistered technicians. Fewer than one-third of the tasks contained in the task inventory had a difference in the mode value selected by any of the four samples. Of those tasks reported, the differences in the mode response of 16 tasks were discussed. Again, this observation is made to emphasize the fact that the survey response provided consensual validation for a majority of the tasks.

One must be extremely careful in extrapolating to the general population the results of a survey, particularly a survey for which there was a small number of respondents. The following conclusions appear to be warranted by the data: (1) The task list composed by staff members of the Allied Health Professions Project was highly representative of those tasks performed by Electroencephalographic Technicians. (2) Within the confines of the sample, there appeared to be consensual validation for a majority of the tasks. (3) The data suggested that the National Technical Advisory Committee perceived that the tasks were done more frequently, required more supervision, and were more difficult to perform than were the other samples discussed. (4) Eighty-four percent of the tasks listed in the inventory were performed at a frequency greater than once a month. (5) The technician did not require a high degree of direct supervision of a majority of those tasks which were listed in the task inventory, i.e., within the limitations set by the supervisor, the technician had a high degree of autonomy. (6) A small proportion of those tasks which were being done were perceived as being difficult to perform.

On the basis of this survey, it was recommended that any educational training programs include material pertinent to each of the tasks listed on the task inventory. Furthermore, efforts should be undertaken to ascertain whether current training programs are fulfilling the current needs of EEG Technicians, i.e., whether current training programs are teaching all of the tasks listed in the task inventory.

A STUDY OF THE CLINICAL LABORATORY OCCUPATIONS – A main purpose of this survey analysis was to determine the appropriateness of the task list as a foundation for curriculum development. First, the curriculum content (tasks) needed to be determined and then the knowledge and skills required for the satisfactory performance of the tasks had to be evaluated. Three factors that determined curriculum content were task performance, task criticality, and technological change.

High Performance – One approach to curriculum development should be the use of high-performance tasks as a content nucleus for formulating instructional units. A curriculum based on the high-performance survey tasks would include skills and methods to clean equipment; inventory and order supplies; prepare solutions; collect and process patients' specimens; operate balances; use centrifuges, pipettes, and temperature-control apparatus; and communicate laboratory findings.

The curriculum content should include the skills and knowledge necessary in:

> Hematology: To perform the complete blood count (hemoglobin, hematocrit, white count, red count, and differential count), other cell counts (spinal fluid and platelet), the sedimentation rate, and venous coagulation studies.
>
> Urinalysis: To perform the routine urinalysis including macroscopic, biochemical, and microscopic analyses.
>
> Microbiology: To set up cultures (inoculate and incubate) and to stain slides.
>
> Biochemistry: To perform a complete chemical assay, using both manual and automated techniques. The justification for this approach is that in biochemistry, there are numerous methods for doing each test. New clinical chemistry tests are continually being developed. Instead of acquiring knowledge needed to perform a specific test, a student should learn the basic concepts and techniques in the complete chemical assay. These would include:

a. Quantitatively selecting a portion of the specimen sample.

b. Removing impurities, if necessary.

c. Obtaining a specific reaction for target chemical component.

d. Measuring the amount of the component.

e. Calculating the amount of the component in the sample.

Low Performance — One educational problem concerns deciding where training should be offered for tasks that are rarely ordered or that are performed in specialized laboratory facilities, e.g., research centers. It would appear that training for these tasks would best be done at the site where they are performed. For example, since most medical laboratory workers do not maintain parasite cultures, there seems to be little justification for providing more than basic information about this topic in the general curriculum for medical laboratory students.

Criticality — A highly critical task is one which, improperly performed, could be harmful to the patient or cause damage to equipment. Adequate curriculum content should be provided for a critical task, even though there is low performance. For example, "Performing first aid for shock" is a highly critical blood bank task performed by only 29 percent of the blood bank certified generalists; however, the curriculum for the training of workers who draw blood from donors should include the instructions for treating shock.

Technological Change — The medical laboratory field is in a constant state of flux. New procedures are presented in almost every edition of laboratory and pathology journals. There are many announcements of new materials and equipment. Automation is replacing numerous manual techniques. Twenty-eight percent of the respondents operate automatic cell counters and over one-third operate automatic analyzers. New equipment calls for new skills. Roger Hamstra, M.D., of the University of Colorado Medical Center, in a recent speech outlining future trends in medical technology, stressed that proficiency with instruments (repair and troubleshooting) is becoming a necessary part of the laboratory workers' skills. These developments have a large impact on educational and training institutions. Their curricula must include instruction in these newer methods and in maintenance of new equipment if medical laboratory students are to receive adequate training to meet the realities of the world of work.

THE DENTAL AUXILIARY OCCUPATIONAL ANALYSIS

1. The hypothesis that substantial areas of commonality exist among the three Dental Auxiliary Occupations was largely confirmed by findings of the task inventory survey. The three common areas initially so identified were: (1) Orientation; (2) Basic Laboratory; (3) Anatomy. The study revealed, however, that except for certain housekeeping and inventory tasks, Dental Assistants require no formal training in laboratory procedures. Similarly, Dental Hygienists are not required to perform laboratory tasks and so do not require training in this area. It was recommended that these findings be considered in the design of curricula for Dental Assistants and Dental Hygienists.

2. The areas of commonality hypothesized for the Dental Hygienist and Dental Assistant were: (4) Basic Sciences; (5) X-ray; (6) Dental Office Procedures; (7) Dental Assisting;

and (8) Dental Health Education. These were confirmed for the two occupational groups except with respect to X-ray procedures. The survey findings made it apparent that X-ray procedures were being performed by selected personnel. It was recommended, therefore, that consideration be given to a modification of curricula to permit only basic X-ray techniques to be taught in the schools and more detailed instruction to be given at the inservice level.

3. Analysis of the survey data confirmed the assignment of instruction in occupational specialties to the three occupational groups. It was revealed, however, that the Dental Laboratory Technician requires little education or training with respect to office management procedures. Moreover, results of the survey made it obvious that the field of Dental Laboratory Technician is developing highly specialized personnel in the various divisions of laboratory procedures. For this reason, it is possible that complete training in all laboratory procedures may be neither necessary nor desirable. To avoid training and education for which the technician may find no use in his occupational setting, it is recommended that curricula provide opportunities for specialization in line with student preference, labor market demand, and the opinions of experts in the dental laboratory field. Moreover, opportunities for more intensive training in the specialty of his choice should be made available to the student after he has obtained employment in a dental laboratory.

4. With the minor exceptions cited above, it is believed that the validity of the dental auxiliary curriculum was sustained by the survey findings, and it was recommended that this be used as the basis for curriculum development for the Dental Auxiliary Occupations.

5. It was recommended that those instructional units which bridge the various areas of allied health be developed on the basis of interdisciplinary consultation in order to create "core" units adaptable to the needs of appropriate other allied health professions.

6. Two of the instructional units under the X-ray heading, "Creating and developing a latent image: darkroom techniques" and "X-ray physics and safety factors," should be developed cooperatively for potential use in the training of Radiologic Technicians.

GASTROENTEROLOGY ASSISTANT OCCUPATIONAL ANALYSIS — The job of the gastroenterology assistant consists mainly of safely intubating patients and accurately collecting materials to be analyzed. Currently, assistants are recruited from among laboratory and nursing personnel and trained on the job. It is felt that to meet varying levels of need for their services, there could well be three categories or levels of G.I. assistants: those with a varying amount of college training, comprising (1) assistants in smaller community hospitals who are drawn from the ranks of lab assistants and nurses and trained on the job in specific G.I. procedures, and (2) those technicians working in a university setting and involved in both academic (research) and clinical work; and (3) the full-time assistant in a larger hospital, devoting all his time to working with gastroenterologists. Because of the nature of the job, the last-named is considered appropriate for the conscientious high school graduate who can be trained on the job.

Training of the G.I. assistant to perform the duties described in this report would best be offered in a university setting or a large community hospital, where enough patients would be available to provide adequate learning experience. It might take the form of short, intensive on-the-job training, utilizing a comprehensive training manual for whose content suggestions have been offered.

Salary levels should be commensurate with educational background. It is suggested that $5-7,000 would be appropriate for a high school graduate after initial training, with opportunities provided for advancement. For a junior college or college graduate, the salary range might be $7-10,000.

A number of hospitals feel that there is a need for improvement in their gastrointestinal services, but in some cases, physicians' requests for procedures are infrequent. It would be helpful if an educational program could be directed to internists and general practitioners to inform them of the scope of diagnostic procedures available in the field of gastroenterology. This, in turn, would lead to greater utilization of the G.I. laboratories, with consequent increased demand for the service of G.I. assistants. Conversely, availability of assistants might well lead to greater activity on the part of the gastroenterologist as personnel becomes available to take over the tedious tasks involved in G.I. lab procedures.

A STUDY OF NURSING OCCUPATIONS

1. Sixty percent of the designated tasks are done by all categories of workers: NA/LVN(LPN)/RN. These provide the basic curriculum for nursing. Eleven percent of the tasks were identified as nonnursing. In reality, these tasks usually are done by all personnel. These tasks need further investigation to determine whether they should be incorporated into the nursing curriculum or be part of the orientation program in each agency.

2. The designation by the National Technical Advisory Committee of tasks to a specific category of worker was found to be at variance with practice in several areas. Some of the lower skilled workers (NAs) are, in fact, carrying out specialized tasks, i.e., "suction patient's trachea." Further study is needed to determine if these tasks can be safely performed by the less skilled worker.

3. The setting of the agency, i.e., extended-care facility or small hospital, appears to be a factor in the utilization of the lower skilled worker (NA) in the more critical nursing tasks.

4. The routine safety and comfort measures and the nutrition and elimination tasks seem to be performed most frequently by the NA/LVN(LPN). Based on this information, it would appear that the basic nursing instructional unit should be concentrated in the above areas.

5. The administrative tasks such as planning, directing, and evaluation of nursing care, on the basis of the survey data, are done most frequently by the Registered Nurse. It would appear to be more efficient to place this content in the more advanced nursing educational sequence in the Registered Nurse program.

6. By grouping tasks into specific functional areas, it should be possible to develop a progression of skills and knowledge which will meet stated performance levels and allow for horizontal and vertical mobility within the health occupations.

7. Suggestions for further study are included.

A CAREER MODEL FOR THE NURSE PRACTITIONER – See page 120 for a description of the contents of this publication.

OCCUPATIONAL ANALYSIS: HOSPITAL RADIOLOGICAL TECHNOLOGIST – Although the survey population was limited in size, the data may prove useful in elucidating a number of current practices and trends in the field of Hospital Radiology. The survey results show a clear delineation of task performance among the different occupational groups included within the survey population:

> **Radiologists:** The Radiologists were most active in performing the radiology and administrative tasks.
>
> **Chief Technologists:** These respondents indicated extensive involvement in all of the functional areas covered in the survey questionnaires, with the exception of the research tasks, which were generally not performed by any of the respondents.
>
> **Staff Technologists:** The respondents in this category reported that their main area of responsibility revolved around the performance of the radiology and the miscellaneous tasks.
>
> **Technical Support:** This group was relatively inactive in the performance of the majority of the tasks covered in the survey. The two functional areas in which the respondents indicated the most activity were the radiology and the miscellaneous tasks.
>
> **Nontechnical Support:** These respondents indicated that their responsibilities centered around the performance of clerical tasks.

Implications for Curriculum Development – The primary objective of the AHPP is to develop curricula and educational materials for the allied health occupations. The results of the present survey will guide the project's efforts in attaining this goal. The survey tapped three separate but related areas of task performance: percentage of performance, frequency of performance, and difficulty of performance. Although each of these parameters offers valuable information and may be used by itself to suggest patterns and areas of emphasis in the development of curricula, the staff at AHPP decided to integrate the three indices of performance so as to produce a single and more readily applicable indicator of performance.

It was felt that the percentage of performance index was the most potent of the three performance parameters and should be given priority over the Frequency and Difficulty ratings. The Frequency rating appears to be an integral part of the performance pattern, however, and it was felt that tasks which are typically performed daily should be given priority over those that are performed less frequently. Similarly, it was felt that tasks which received a difficulty rating of Average or Hard should be given precedence over tasks rated Easy.

It should be stressed that the recommendations expressed here are drawn exclusively from the data as reported by the survey respondents. If the findings appear to contradict expert opinion (or common sense), it must be remembered that the results of the survey are only one of several indices used in the development of curricula. The recommendations are merely an empirical guide to be used where appropriate. Recommendations were not included for the Radiologists, because the AHPP is not directing curricula to this category of personnel.

OCCUPATIONAL ANALYSIS: RESPIRATORY CARE/INHALATION THERAPY – With the limitations of the sample, the following conclusions appear warranted:

1. Individuals employed at various occupational levels indicated (by way of self-administered survey questionnaire) little differentiation in the performance of those tasks which were listed on the survey instrument.

2. Based on the data reported, it would seem as though there is a relationship between hospital size and the existence of a Respiratory Care or Inhalation Therapy department. A preponderance of the survey respondents were employed in large hospitals, 200 beds or more. And, at the same time, there were no personnel nor were there Respiratory Care of Inhalation Therapy departments reported at those extended-care facilities which are a part of the AHPP survey sample. Thus, the preceding conclusion which related hospital size to the existence of a formal department of Inhalation Therapy or Respiratory Care seems justified. In addition, the dispersion of survey respondents among hospitals of various sizes clearly indicates a trend which favors the larger institutions.

3. The survey data did not indicate the existence of a well-defined career ladder, nor did the data indicate that health workers in other professions were becoming certified or employed in Respiratory Care or Inhalation Therapy departments. Survey respondents indicated a very wide variety of previous work experience. (It would be interesting to replicate this portion of the study in order to ascertain if occupational mobility, horizontal and vertical, exists within the allied health occupations in general and if career opportunities do exist in the Inhalation Therapy or Respiratory Care area.)

4. Several trends were observable which pertained to equipment functions; there was a very slight trend which indicated that Aides/Orderlies perform cleaning operations more frequently (based on percentage performing) than did the other groups. On the other hand, as complexity of the equipment functions increased, the percentage of Aides/Orderlies responding decreased and the percentage of the remaining position titles performing these functions increased.

Implications of the Study – The primary purpose of conducting this study was to determine the specific tasks or set of tasks which may be performed by a specific level of personnel employed either in an Inhalation Therapy or Respiratory Care department.

A hierarchical ordering of task groups has been defined on the basis of this survey; four distinct sets of tasks are identifiable. For the purpose of consistency with the survey data, these sets may conceivably be assigned to Aides/Orderlies, Technicians, Therapists, and Administrators/Supervisors. With the exception of four tasks, the sets of tasks are built one upon the other. For example, the Administrators/Supervisors task list includes all of the tasks listed for the preceding levels of personnel.

Thirty-seven of the tasks listed on the survey questionnaire were not included. These are tasks which are not reported as being performed by many personnel in Inhalation Therapy or Respiratory Care departments. It should be remembered that the survey was designed to sample the entire range of functions which may be found within the occupational area: tasks which are not in the domain of Inhalation Therapy; tasks which are specific to a particular type of hospital or environment; or tasks which are just now emerging as Inhalation Therapy responsibilities.

SURVEY OF PRACTICES IN HOSPITAL PHARMACIES – The two subjects that should be given first priority in the development of a Pharmacy Technician curriculum are dispensing and purchasing (purchase, inventory, receive, and store). Bulk-compounding, prepackaging, and sterile solution manufacturing may be assigned a lower order of priority but nevertheless deserve a place in the curriculum, because they are activities likely to be performed in large health-care facility pharmacies that employ nonprofessional workers. Training in the administration of pharmaceuticals does not seem to be necessary for Pharmacy Technicians; it is an activity in which nonprofessional pharmacy workers do not ordinarily participate.

The results of the present survey can be used as a supplement to the task list previously developed as a basis for instruction of a Pharmacy Technician curriculum. A number of specific procedures are identifiable as being the usual ones followed in health-care facility pharmacies for the performance of certain tasks and therefore as being appropriate for incorporation into the curriculum. A few of the tasks originally included in the list are ones that are not performed in health-care facility pharmacies and need not be included in a Pharmacy Technician curriculum.

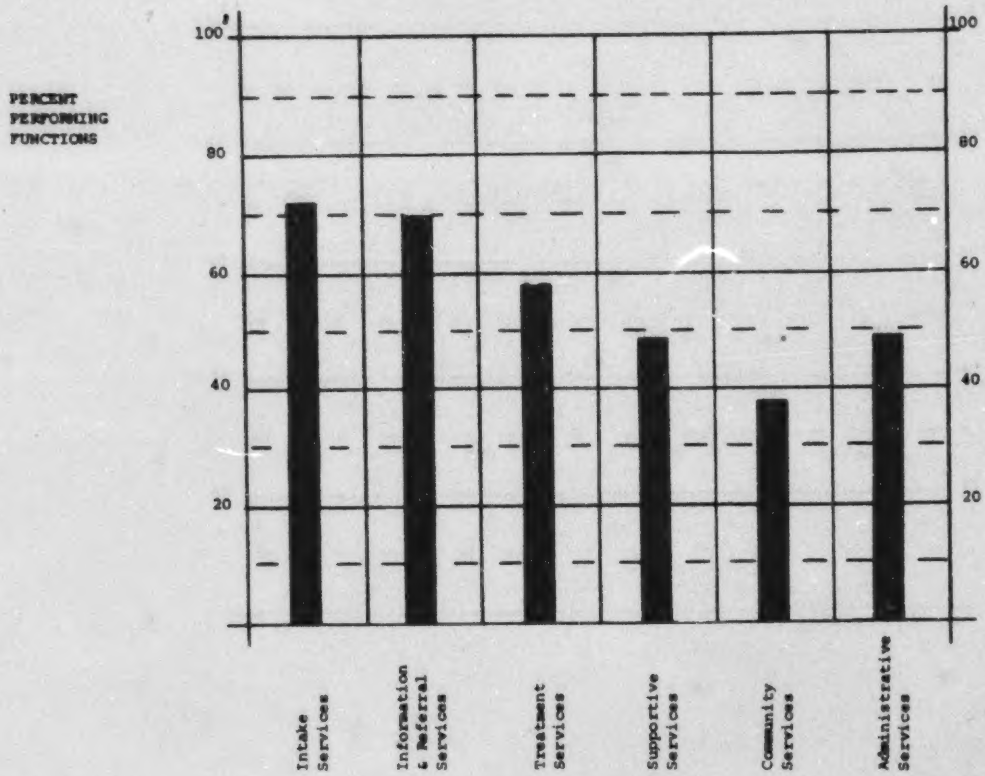
OCCUPATIONAL ANALYSIS OF SOCIAL SERVICES IN MEDICAL-CARE FACILITIES – *Medical social services staff give very little priority to community services. The most performed community tasks are those which promote facility services. Preventive health education is minimal.*

The following chart shows the relative differences in performance and frequency of performance between the six social service functions. Four of the six functions – Intake Services, Information and Referral Services, Supportive Services, and Administrative Services – represent fairly basic social service activities, and one would not expect to gather much about departmental orientation from them. For example, it comes as no surprise that Intake Services should be the priority function in both performance and frequency of performance scales. It may be slightly surprising for many observers to find Administrative Services ranking fourth in performance and fourth in frequency of performance. However, this scale is in all probability artificially depressed in that there are tasks in the other functions which could easily be classified as administrative. For example, task 33, "Facilitate discharge plan," is classified under Treatment Services, although it is largely an administrative activity. These functions are interesting more from the standpoint of role differentiation within the function than from that of total performance.

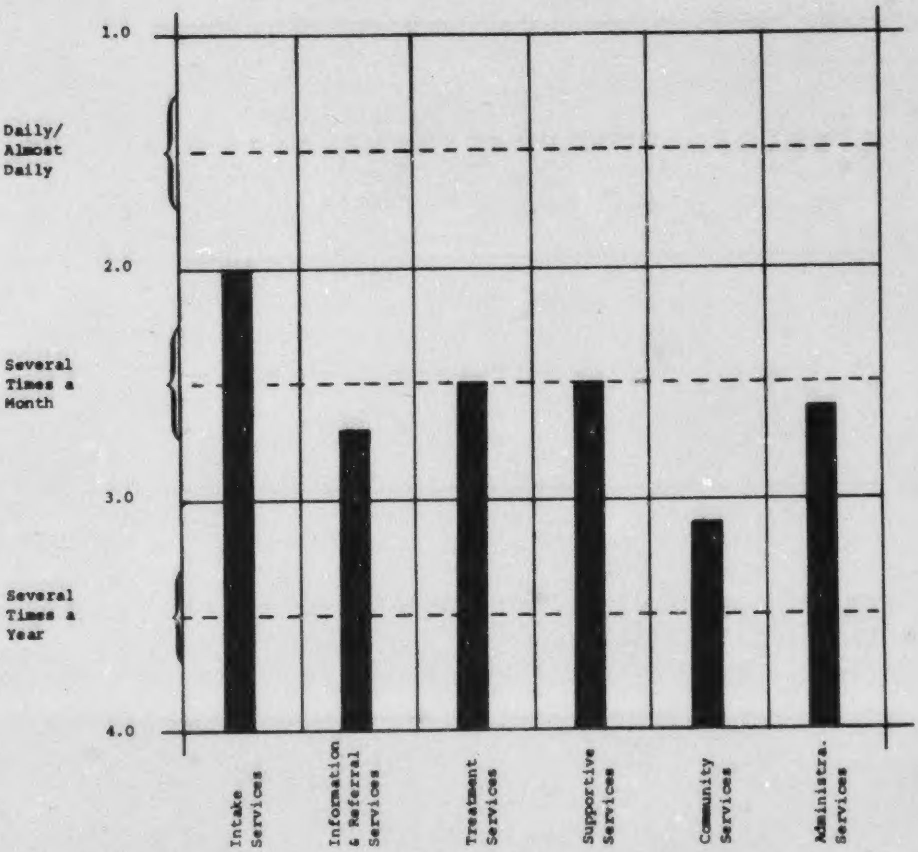
However, the other two functions – Treatment Services and Community Services – are important in the context of total performance. These functions represent a key issue in the current social service controversy. The issue has to do with the balance between treating a patient to help in adjustment to stress and working in the community to help remove the stresses themselves. The medical analogy is the balance between crisis-care and preventive medicine. Both should be practiced, but they are out of balance, with crisis-care the "glamour industry of medicine." Similarly, it has been argued strongly that the social services are out of balance in their orientation, which

CHART VII

PERCENT PERFORMING SIX SOCIAL SERVICES FUNCTIONS



MEAN FREQUENCY OF PERFORMANCE FOR SIX SOCIAL SERVICES FUNCTIONS



they claim leans heavily toward the therapeutic approach. In practice, the balance is strongly tipped against community involvement. The Community Services category is performed by only 38 percent of the total social service staff and only on the average of several times a year. Furthermore, the most heavily performed tasks in the Community Services function were those that had to do with strictly health-related matters. By contrast, Treatment Services are performed by 58 percent of the staff and on a weekly basis. The imbalance no doubt is attributable in part to manpower problems. The immediate needs of clients cannot be ignored or bypassed for activities which can bring relief only at some undetermined date in the future. However, a more pertinent cause for the imbalance might lie in the fact that medical social service staffs are confronted by clients and are not confronted by the community, nor do social service staffs put themselves in a position where they confront the community. Nevertheless, there are external signs that the imbalance may soon be righted. The developing political trend is toward community and preventive medicine. Walk-in storefronts such as the Neighborhood Service Centers are beginning to open up in large urban areas, and the concept of "social health," whereby sound medical care depends on an awareness of the socio-economic environment of the client, is beginning to gain currency. In consequence of these developments, the social service departments may also find themselves caught in the tide and encouraged to operate more and more outside the facility.

This, of course, is not to recommend that crisis-reduction techniques should be discontinued. There is an obvious need for such service, and it must continue to be met. However, as long as therapy is the predominant function, the social work profession is open to the charge of treating the symptoms of a disease rather than its causes. The relationship between mental health and environmental factors has been well documented, and there is much validity to the argument that the responsibility of medical social services is in treating the one to work toward improving the other.

No distinguishing patterns of performance or of frequency of performance emerged between the levels of employees identified.

Aides and social worker assistants perform higher order social service tasks such as conducting individual therapy and treating children with primary disorders. With the aides, although their total performance is not as great as that of the M.S.W.'s, those who do perform these tasks tend to perform them more frequently than the M.S.W.'s.

Looking at the data for any of the six functions identified in this survey, it is hard to escape the conclusion that from the standpoint of both performance and frequency of performance, there are many more similarities among the various levels of employees than there are differences. Even activities such as practicing individual and group therapy, long considered the province of the M.S.W., or treating children with primary disorders, are being carried out not only by social worker assistants but by aides.

The differentiation among levels of employees was made on the basis of educational attainment, inasmuch as this is the prime discriminator currently used in social work employment practices. Advancement up the career ladder in the social services depends mainly on education. An aide can progress in his or her career only to a certain point, after which it is necessary to receive an A.A., B.A., and eventually an M.S.W. to continue to advance and receive appropriate salary increases. However, on the basis of this survey, it would seem that formal education is a poor discriminator of task performance. The survey showed that most tasks are being performed regardless of previous education. It is, of course, important to realize that this survey does not supply evaluative data as to how well the various levels of personnel are accomplishing their tasks. It is possible that aides who perform higher order tasks may be performing them inadequately. However, among the NTAC for the Social Services, there was "the general feeling that the completion of academic credentials may not have anything whatever to do with how well an individual performs his task function."

It is consequently hard to escape the conclusion that education is often an irrelevant requirement and an unnecessary obstacle to the progress of many social service personnel. The other conclusion that seems to follow from the above is that social service staffs at all levels are performing roles for which they have not been trained. Whether it is desirable or not, aides are performing higher order treatment tasks, and as long as this remains a distinct possibility, it would seem important that they be given training in this regard. However, a very little training is given to aides to help them perform such tasks. Similarly, the survey results revealed that M.S.W.'s perform a high degree of supervisory roles. Accordingly, all aspects of staff management – planning, control, evaluation, and delegation – must become a large part of M.S.W. training if they are to perform effectively.

It would therefore seem essential that training approximate actual job performance rather than professional prejudice. Further, it would seem important that some form of recognition be granted for experience so that it can be used to overcome current educational obstacles. In this context, it must be recognized that although experience may well be a necessary condition of social work competence, it is by no means a sufficient one. Hand-in-hand with recognizing experience must go the evaluation of experience, whereby experience that is cumulative can be distinguished from that which is merely repetitive.

It is relevant at this point to focus on the use of aides in the social service profession, since they constitute the most recent addition to the work force and are having a considerable impact upon staff utilization. The NTAC identified 45 tasks as being Level I tasks, i.e., tasks which were suitable for aides to carry out. However, it is only fair to point out that there was a considerable range among the experts as to what tasks could be done by individuals with various levels of training. It was generally agreed that a causative factor of this wide range was that people were influenced more by their own experience with aides rather than by theoretical academic qualifications. This perception was borne out in interviews conducted in connection with this study. Those who used aides in higher order tasks felt that they were performing them well, whereas those who did not allow aides individual responsibility felt that aides were not capable of assuming it. It is probably fair to say that aides are capable of doing more than most of them are allowed to do.

There has been much written in the literature on the subject of the use of nonprofessional personnel, and much of it appears to be highly critical. M.S.W.'s are accused of protecting their professional status at the expense of the needs of their clients, and of using aides as a dumping ground for all the tedious and unrewarding tasks that they were previously forced to fulfill. The charge is made that M.S.W.'s are too comfortable in the security of their desk and office to bother to work in the community. There is certainly some truth in these accusations. However, it is a little too glib to attribute the inefficient use of aides to M.S.W. unwillingness to use them properly. There are other factors which may be operating and which are rarely mentioned. One of these is that M.S.W.'s rarely receive training in the management of aides. Another is that aides are often hired not in response to the M.S.W.'s requests but for political reasons. The aides are imposed on the

M.S.W., who must then make up job descriptions for them. It is no wonder that in these circumstances, the aides are often given the meanest tasks to perform. Furthermore, allowing aides to work in the community raises enormous supervisory problems. To prevent aides operating outside their control, many M.S.W.'s will devise obstacles to keep them from operating effectively in the community. It would seem that inefficient use of aides is attributable as much to the inadequate training of M.S.W.'s as to their unwillingness to use aides.

Model for Staff Utilization – It is possible that the two issues of underinvestment in community activities and underutilization of aides are symptomatic of a basic confusion within social service departments as they are currently operated. Aides, for instance, are hired because of their indigenous characteristics, but often the effect of department screening and training is to discriminate against the very attributes for which the aides are hired. Many aides are hired to work with people in the community, but they are judged by their ability to conform to agency bureaucratic practices rather than by their competence in the field. Similarly, the M.S.W. who by training and inclination often is best equipped to treat categorical disorders and to arrange the delivery of specific services is under pressure to leave the office and to work in a community he or she does not know and in which he or she does not feel comfortable.

The basic confusion may reside in the failure to distinguish between two main functions which are essential to meeting the client's needs. One of the functions is that of interaction: the client needs to talk to someone he can trust, the client community needs people who can act as intermediaries, as advocates and planners. The other function is that of matching client need with agency service, of processing and expediting the client's business, of keeping and updating records – in short, the function of business operations. Both functions are vital to the client's needs. It would seem that the social work profession needs people who are competent in either of these activities, whereas currently the profession is requiring that people be competent in both. If client care delivery can be looked at from this standpoint, then the problem of professionalization will diminish.

Certainly, there will be levels or gradations of personnel, but there would be no need for someone who is competently performing the interaction function to excel in business operations as well. With this organization, professionalization could be gained through a combination of experience, training, and job competence. There could be parallel staff to perform the parallel functions as outlined in the following chart. The ratio of field staff to business operations staff would complement their activities and maintain the day-by-day running of the department. Level III, in both staffs, would be a professional position. The professionals would have to supervise the lower ranks and make high-level administrative decisions about their particular operations.

What is interesting about this model, and what makes it particularly illustrative, is that the M.S.W. as presently trained would be hard put to qualify as a professional on either staff. Graduate schools have tended to restrict the training of M.S.W.'s to "clinical work with individuals or groups of clients as if no other functions lay in the immediate future of their graduates." In the model, clinical work is but a part of field staff functioning: the field staff professional would also need to be an expert in the community, knowing its members well and being capable of mobilizing support within the community and acting as liaison with community grassroots organizations. As for business operations, the M.S.W. does not have enough training in top-level data managing and forecasting techniques to qualify as a professional on that staff.

ORGANIZATION OF SOCIAL SERVICE DEPARTMENT BY FUNCTION

Function	Sub-Function	SOCIAL SERVICES STAFF					
		Field Staff			Operations Staff		
		Level* I	Level II	Level III	Level* I	Level II	Level III
INTERACTION	With the client - outreaching - brokerage - health education - individual therapy	■	▨	▨	■	▨	
	With the client's family - health education - homemaking - family therapy	▨	▨				
	With the community - health education - mobilizing and liaison - planning	▨	■	■			
	With other agencies - record-sharing - advocacy - liaison			▨		▨	▨
BUSINESS OPERATIONS	Field-related business - up-date client records - arrange transportation - collect resource data			▨	▨	■	▨
	In-house business - process requests - manage and analyze data - forecasting - administer budget				▨		■

▨ Area of responsibility

■ Area of primary responsibility

* Levels I, II, and III represent a hierarchy with Level I the lowest level.

To train these two types of staff, two distinct curricula would be needed, the one leaning heavily toward the client community, the other toward data management and business practices. Under such an arrangement, each staff would need a clear understanding of the functioning of the other so that both could work effectively in the client's interests. Furthermore, the dual system would call for both staffs to receive intensive training in record-keeping, which would take on a new significance. If the two staffs are to communicate effectively with each other, some shorthand notation system for exchanging information about the clients would certainly be necessary. Indeed, effective communication is the key to the workability of the suggested system of dual responsibility. Without it, social service departments may still be open to the charge of fragmented, episodic delivery of service. What is certain, however, is that judging from the data in this survey, there is little coherence in job roles in the social services as they are currently organized, and there is an urgent need to fashion a system whereby the basic organizational structure is directly geared to the emotional and material well-being of the client population.

OCCUPATIONAL ANALYSIS: ENGINEERING MAINTENANCE – A survey of practices in hospital maintenance departments indicates that differentiations with respect to the tasks performed by maintenance personnel can be made among occupational titles and among empirically defined categories within occupational titles. There is a clear division of labor between maintenance superintendents and maintenance workers, even in small facilities that have very few workers. Department heads and other personnel who function as superintendents, while supervising all tasks performed by workers, perform mainly tasks related to the administration and management of maintenance operations. Some superintendents, particularly those who are department heads in large urban hospitals, perform only tasks of this kind; others perform certain additional tasks, most of which are related to the planning and implementation of safety precautions and to the inspection and testing of equipment.

Differences in the numbers and kinds of tasks performed by maintenance workers furnish a basis for a classification of personnel who are neither superintendents nor craft specialists into three categories. Designations for these categories are suggested by their functional characteristics rather than by any differences in position titles among the workers. While maintenance workers within each category perform a variety of tasks cutting across the lines of different crafts and trades, two of the categories show tendencies toward specialization in certain areas. Mechanical maintenance workers are concerned substantially with maintenance of machinery and equipment, and they perform very little work related to carpentry. Building maintenance workers perform tasks related to the maintenance of structures and furnishings but have relatively little to do with machinery except for some tasks related to the operation and maintenance of boilers. A third category comprises general maintenance workers who do all tasks performed by either mechanical or building maintenance workers and various additional tasks that are not performed by either of the more specialized categories.

The existing functional divisions among superintendents and workers suggest how curricula might be designed in accordance with the actual requirements of positions that are available in hospital maintenance departments. Curricula for maintenance superintendents should provide training primarily in the management-related functions that are performed by all superintendents, and should be designed to include appropriate training in certain other functions that may be either performed or supervised by superintendents. Provision also should be made for teaching the kinds of knowledge and skills necessary for exercising supervision over tasks that are performed by workers.

Curricula for maintenance workers can be organized to provide training for all workers in a common core of tasks, followed by separate further training sequences for mechanical and building maintenance workers. Development of additional courses for training in functions performed only by general maintenance workers then would permit a progression from qualification as either a mechanical or a building maintenance worker to qualification as a general maintenance worker.

OCCUPATIONAL ANALYSIS: HOSPITAL FOOD SERVICE

Background Characteristics

1. The personnel employed as General Helper, Food Production Supervisor, and Food Service Supervisor have less education (median – high school) when compared to Assistant Dietitians, Dietitians (median – bachelor's degree) and Administrators (associate of arts degree).

2. All categories have more than 3 to 5 years in the present position. This would indicate "stability" in the department. A median of 10+ years for Food Production Supervisors might indicate a reluctance to seek other department positions.

3. Seventy percent of the Administrators in the survey were males, whereas there were no males among the Assistant Dietitians.

Current Practices – A study of the current practices in the Food Service Department indicates a pattern of considerable overlapping of tasks. The tasks of the Administrator are distinctive and unique. Although the Food Service Supervisor, Food Production Supervisor, and Dietitian perform certain tasks regularly, they rarely perform tasks exclusive to their occupation.

The Expert Panel evaluation of the difficulty of a task generally disagrees with the survey respondents'. The panel usually rates the difficulty level higher than it is rated by personnel performing the task. According to the Expert Panel, there is no discernible relationship among criticality, difficulty, and the required technical knowledge. However, the rating of criticality should be used in determining the necessary proficiency for performance of a task. The difficulty rating should be used to establish prerequisites and key points in instruction.

The comparison of current practice with the recommendations of the Expert Panel as to occupational level showed considerable discrepancy. This difference might be attributed to the varying sizes of the Food Service Departments in the hospitals surveyed.

Educational Implications – The hospital is now carrying the burden of instruction because of the number of personnel who have had no prior training or previous hospital experience. The development of instructional units for training new employees would be of great benefit.

Areas of training were identified by analyzing tasks which are currently performed by the different occupational levels of personnel. Tasks were grouped into content areas, leading to the formulation of instructional units. A combination of instructional units, the completion of which prepared the worker to progress to a new occupational classification, makes up the curriculum. Each curriculum is different and should apply to the tasks to be performed by the occupational category which the worker desires to attain.

OCCUPATIONAL ANALYSIS OF TASKS PERFORMED IN A MEDICAL RECORD DEPARTMENT – A study of current practices in the Medical Record Department enables the differentiation of tasks performed by each occupational title. The National Technical Advisory Committee's recommendations regarding the tasks to be performed by the various occupational tities are at variance with the current practice.

The National Technical Advisory Committee's recommendations, together with current practices, place admitting tasks, medical library functions, and ward clerk tasks outside the purview of a Medical Record Department. Filing and retrieval of medical records and checking for discrepancies in the charts emerge as common functions of all medical record personnel. An analysis of both common and unique tasks leads to the conceptualization and listing of several educational modules for the training of personnel in each occupational category.

Twenty-five percent of the survey respondents consisted of individuals who had neither prior training nor experience to do the job. The hospitals may profit a great deal by using self-instructional modules for giving on-the-job training. Many tasks pertain to procedures that are peculiar to the hospital concerned and these are best taught within the facility. For such tasks, modules that "program" the practice in the facility may be utilized.

There is no discernible relationship between criticality of performing a task and the difficulty and technical knowledge needed to perform it, as rated by the National Technical Advisory Committee. However, it is important to take the National Technical Advisory Committee's ratings into consideration when designing the educational modules. Criticality would influence the degree of proficiency a trainee must attain. Difficulty, as perceived by the personnel and as rated by the National Technical Advisory Committee, would indicate a need for a thorough examination of the prerequisites and points of emphasis in training for the desired behavioral objectives.

Parenthetically, it may be pointed out that the National Technical Advisory Committee rated many tasks as higher in difficulty than the personnel performing the tasks.

To recapitulate the learning progression, the educational modules designed for the ART can be divided into two sections which may be taught sequentially. The clerk-typist is found to be performing some of the tasks included in the first section of MRT/ART required performance level. The transcriptionist, medical record secretary, and medical record clerk would also be able to acquire skills that are contained in the beginning section of MRT/ART training by taking certain of the prerequisite modules while on the job. Full-fledged ART's with experience could advance to the level of the RRL by electing to continue their education.

A STUDY OF PURCHASING OCCUPATIONS IN HEALTH-CARE FACILITIES – The survey results suggest that certain approaches to curriculum development would be inappropriate. While almost all hospitals have purchasing departments and some degree of centralization of purchasing, pharmacy and dietary department heads often perform many purchasing functions for their departments. In some smaller hospitals and in extended-care facilities (which usually do not have purchasing departments), some purchasing functions may be performed by administrators and others by using-department personnel. The lack of conformity among institutions and departments, therefore, might preclude development of any one general purchasing curriculum that would suit the needs of all personnel who engage in purchasing activities. However, the results do show the presence of personnel in health-care facilities whose major areas of responsibility are purchasing.

When purchasing functions are shared between purchasing department personnel and using-department personnel, there seems to be no generally consistent division of responsibility according to occupational classifications. In many areas of activity, task performance appears to be determined more by specific institutional preferences or requirements than by the occupational titles of the personnel involved. Occupational classifications thus would not serve as a definitive guide to the construction of curricula.

Curricula in the field of purchasing might best be constructed by developing instructional units, each of which would cover a circumscribed area of tasks that relate to a common function. The 26 areas into which tasks were grouped for this report were intended to serve as first approximations of the subject matter for such instructional units.

These units will provide flexibility in the composition of curricula to meet the varied needs of different health-care institutions. It is possible to combine units to form general courses of instruction that can be taught at levels up to that of Associate degree for purchasing personnel, and also to select individual units that specific institutions might require for preservice or inservice training programs for administration department heads and other personnel.

The effective use of a modular curriculum for training medical facility personnel in purchasing activities should assist in curbing the rise in medical-care costs, whether or not the individual's primary assignment is purchasing.

OCCUPATIONAL ANALYSIS: WARD ADMINISTRATION – Nursing Unit Administration was defined in terms of nonclinical tasks performed on the unit.

A survey of current Unit Administration practices in a group of health facilities made possible the differentiation of tasks performed by various occupational categories. The survey response clearly showed a division into two occupational groups regardless of position title – clerical or managerial. No tasks were performed exclusively by the clerical group. Both groups were performing 98 tasks cutting across all functions. The managerial group uniquely and exclusively performed an additional 47 tasks. Analysis of the current practice in performance of tasks and clustering these tasks yielded 19 content areas. The first ten content areas constitute the initial curriculum for clerical and managerial personnel. The nine content areas which follow should complete the training for unit managers.

Clerical personnel were performing 27 tasks which the Expert Panel judged to be managerial. In addition, the Expert Panel judged 12 tasks to be outside the responsibility of Unit Management. Three of these are currently performed by Hospital Administrators or Directors of Nursing, concurring with the panel recommendation. Three other tasks were being performed by managers. Three tasks are performed by both groups. Finally, three tasks were performed by neither group, which concurs with the judgment of the Expert Panel that these tasks were not Unit Management functions.

Current practice shows that 63 percent of clerical positions were held by individuals who had no previous hospital work experience. The 78 nurses (of whom 73 were Registered Nurses) who occupied managerial positions reported that they performed a substantial number of tasks considered by expert opinion to be more appropriate for clerical personnel. (The Task Inventory consisted entirely of nonnursing functions and none of the tasks performed required nursing background.)

The Expert Panel generally rated tasks as more difficult than those who performed them perceived them to be. This is a general finding borne out by other surveys in the Allied Health Professions Projects.

Greater criticality was given by the Expert Panel to tasks relating to patient identification, charted information, and public relations than to all other tasks.

Where a formal program in Unit Administration was instituted, the occupation of unit manager, a lower-middle management position, seemed to attract male personnel.

OCCUPATIONAL ANALYSIS: MEDICAL OFFICE ASSISTANT – National survey findings by major function and by occupational categories were done for clerical, secretarial, and administrative functions as well as clinical and technical functions.

A vast majority of the tasks were rated as being easy; the limited number rated moderate or difficult was not sufficient to reach an average of moderate for any of the functional areas. Therefore, this average was computed to two decimal places to show the relative consensus of the level of difficulty judged by the respondents for each occupational category.

The findings of the survey confirmed the well-known fact that physicians' employees are utilized in numerous capacities regardless of background, training, or job title. The findings also indicate that the capacity in which physicians' employees are serving nearly always encompasses both administrative and clinical or technical functions. The main difference, however, is the frequency with which certain tasks are performed by the occupational categories.

The results of the survey further indicate that some differentiations with respect to tasks performed by physicians' employees can be made among job titles and among clusters of job titles that are categorized appropriately. Some respondents representing all five occupational categories were performing tasks in all of the 23 functional areas covered by the survey instrument. However, it would not be appropriate to develop a curriculum that includes all functions for all occupational categories because of the extremely low percentage of respondents who performed certain functions.

For the RNs, 15 of the 23 functions were being performed by 25 percent or more of the respondents. The functions not performed by this category were: Housekeeping, under "Clerical, Secretarial and Management," and none of the five functions under "Business Office" except Cashiering and Banking. Under "Diagnostic Tests and Procedures," the RNs performed four of the six functions; less than 25 percent were responsible for Hematology and X-ray functions. Under "Examination and Treatment," the RNs reported more than 25 percent responsible for all functions except Physical Therapy.

The LPNs reported 25 percent or more performing all seven functions under "Clerical, Secretarial and Management." Under "Business Office" functions, they participated to this extent in two of the five functions, i.e., Billing and Bookkeeping, and Cashiering and Banking. Four of the six functions under "Diagnostic Tests and Procedures" were performed by 25 percent or more of the LPNs. These four were Specimens: Obtaining and Handling; Urinalysis; Microbiology, Pathology and Sterilization; and Electrocardiograms. All the functions under "Examination and Treatment" except Physical Therapy were performed by 25 percent or more of the LPNs.

The MOA-T's reported 25 percent or more of the respondents performing all seven functions under "Clerical, Secretarial and Management" but none of the five functions under "Business Office." The MOA-T's were performing all six of the functions under "Diagnostic Tests and Procedures" and, except for Physical Therapy, they also performed all the remaining functions under "Examination and Treatment."

The MOA-G's had 25 percent or more performing all seven functions under "Clerical, Secretarial and Management" and all five under "Business Office." For the functions under "Diagnostic Tests and Procedures," they participated to this extent in all but two of the five functions, i.e., Hematology and X-ray, and under "Examination and Treatment," Physical Therapy was the only one of the five functions that had less than 25 percent performing the tasks in the area.

For the ADM-CL group, 25 percent were involved in all functions under "Clerical, Secretarial and Management" and all functions under "Business Office." As might be expected, this group was involved in the least number of functions under "Diagnostic Tests and Procedures" and under "Examination and Treatment." The only function where 25 percent or more performed under "Diagnostic Tests and Procedures" was Specimens: Obtaining and Handling, and under "Examination and Treatment," the only function was Preparation of Patient and Assisting Physician.

By using the 25 percent or more of respondents who perform the various functions, it was determined that physicians usually and primarily need assistance in the administrative and business area. Unless the practice can utilize and justify several employees, including technicians and specialists in addition to administrative people, the more generally trained worker best serves the purpose. Curricula for training physicians' employees should be designed in modular or submodular form according to function. In this manner, an employee (particularly a generalist) or a student could select and complete instructional modules as needed to attain additional skills that would extend his assisting ability. This approach also provides upward mobility limited only by the needs of the physician and the student's personal goals.

Broad functional classifications represent four specific areas in which completed training would give the student a marketable skill as a physician's employee. In some cases, a physician's needs may be fulfilled by a student or trainee who completes one or several of the instructional modules under each broad categorical function. An example would be a full-time receptionist who undertakes to complete the instructional modules that are relevant to the reception function. The same situation exists for each of the broad functional areas. In a relatively short period of time, a student would gain specialized or generalized skills that would enhance his or her role in assisting the physician.

Although it is difficult to obtain results by mail surveys on the intangible characteristics that physicians' employees must have, it is recognized that this is of vital importance and must be included in a curriculum for training physicians' employees. The areas in which instructional materials would be necessary for this purpose would be in-depth coverage of the public and patient relations aspects of a medical practice, patient psychology, proper dress and grooming, medical ethics, medical law, and medical terminology.

C. INSTRUCTIONAL MATERIALS BASED ON OCCUPATIONAL ANALYSES

Nursing Skills for Allied Health Services

The instructional materials in this textbook are built around the 184 activities designated in the AHPP national survey as those which are accomplished by all levels of nursing – NA, LPN (LVN), and RN. These activities were incorporated into the 36 instructional units which comprise this text.

Because AHPP was attempting something new in media methodology, the process of developing the materials was a difficult one. Initially, the activities defined in the national survey were outlined in a job breakdown (i.e., subdivided into a logical, orderly sequence which was designed as "Important Steps"). Then, each Important Step was supported by practical content under the heading "Key Points," giving related theory which clarified this step. This included factors that make or break the successful attainment of a skill, e.g., safety precautions; suggestions for making the step easier to do (special timing, handling, positioning, or sequencing); related biological concepts or principles of microbiology where applicable; communication and human relations skills required to assure successful completion of the activity; and pertinent ethical or legal concepts.

The sequence of units was established on the premise of progression from the general and simple to the more specific and complex subjects. It should be noted here that all nursing personnel, regardless of their final exit point on the nursing career ladder, should be well-grounded in the theory and practice of these basic nursing skills before moving on to more advanced responsibilities. Successful completion of this text should assure a competent practitioner who can interrupt the nursing educational process to work as a nursing assistant (entry-level practitioner). It should also provide a sound basis for moving on to the complex skills and theoretical knowledge required in the succeeding levels of nursing practice.

These materials represent an example of media methodology which, on the one hand, permits the student to move at his own rate of speed through the background information and procedural skills and, on the other hand, permits the instructor to be released from the need to repeat information to each incoming student. This allows the instructor additional time that can be spent more productively and creatively in the practice and clinical laboratories, assisting the students to polish their performance, expand their interests and comprehension, and to apply the knowledge and skills related to the care of their patients in the clinical assignments.

The materials are adaptable to a variety of teaching settings; they can be used for on-the-job training through the Associate degree in nursing as well as for adult education and staff development programs for nursing personnel and other allied health professionals who require these skills. The table of contents for this book appears on the following page.

CONTENTS

Volume 1

Unit 1. The Health Worker and the Law 1
Unit 2. Introduction to Ethics in the Healing Arts 11
Unit 3. Environment and the Patient 27
Unit 4. Guidelines for Performance of Nursing Skills 41
Unit 5. Body Alignment, Balance and Movement for Health Workers, Part I 53
Unit 6. Body Alignment, Balance and Movement for Health Workers, Part II 79
Unit 7. Introduction to Charting 99
Unit 8. Handwashing Technique for Medical Asepsis 123
Unit 9. Making Hospital Beds 139
Unit 10. Assisting the Patient to Dress and Undress 163
Unit 11. Baths 181
Unit 12. Care of the Hair 203
Unit 13. Special Skin Care 223
Unit 14. Patient Movement and Ambulation 249
Unit 15. Mechanical Aids for Ambulation and Movement 279
Unit 16. Positioning the Bed Patient 311
Unit 17. Assisting With Nutrition 343
Unit 18. Fluid Intake and Output (I and O) 359
Unit 19. Observing Intravenous Therapy 375
Unit 20. Assisting With Spiritual Care 385
Index i

Volume 2

Unit 21. Urine Elimination 395
Unit 22. Bowel Elimination 433
Unit 23. Collection of Sputum and Gastric Specimens, and Care of the Vomiting Patient 473
Unit 24. Perineal Care 487
Unit 25. Care of the Patient With Gastrointestinal Tubes 497
Unit 26. The Cardinal Signs: Temperature, Pulse, Respiration, and Blood Pressure 523
Unit 27. Admission, Transfer and Discharge 555
Unit 28. Care of the Dying Patient and Postmortem Care 571
Unit 29. Care of Patients Receiving Oxygen Therapy 581
Unit 30. Cardiopulmonary Resuscitation 603
Unit 31. Assisting With Procedures: Heat and Cold Treatments, Turning Frames, and Restraints 615
Unit 32. Application of Bandages and Binders 671
Unit 33. Preoperative Care of a Patient 687
Unit 34. Preparation of Consents, Releases and Incidents 701
Unit 35. Postoperative Care of a Patient 711
Unit 36. Isolation Technique: Direct, Reverse and Terminal Disinfection 741
Index i

Procedures Used in Developing Curriculum for the Nursing Occupations

Based on the findings of *A Study of Nursing Occupations*, this nursing curriculum proposes five stages, from entry level to graduate research work. The occupational analysis revealed that 60 percent of all the nursing tasks were performed by the three categories of nursing personnel studied: aides, LVN/LPNs, and RNs. Of the remaining 40 percent, 28 percent were done by both the LVN/LPNs and RNs; the remaining 12 percent were done only by RNs. Stage I of the curriculum covers the 60 percent of the tasks common to all; Stage II covers the other 40 percent. The student who has completed Stages I and II is a Basic Nurse Practitioner. Stages III through V prepare teachers, administrators, and researchers. The *Career Model* offers ideas for core curriculum materials, suggested instructional units, and an approach to student performance evaluation.

CONTENTS

Page

Foreword iii
Preface vii

A CAREER MODEL FOR NURSE PRACTITIONERS

I. Background Information 1
  A. History 1
  B. Occupations Included in the Grant Program 1
  C. Core Curriculum 3
  D. Definitions of Terms 4

II. The Nursing Program
  A. A Study of Nursing Occupations 6
  B. Report on Current Progress 6
  C. Development of the Nursing Curriculum, Stage I and Stage II 9
  D. Testing Programs 10
  E. Continuing Activities in Curriculum Development 13

III. Evaluation Design 14

IV. Future Plans for the Nursing Program 16

V. Meaningful Change: A Career Model for Nurse Practitioners 17

Bibliography 25

LIST OF SCHEMATICS

Organization of Instructional Materials 5
Career Sequence for Nursing Occupations 27

LIST OF APPENDICES

I. Task Breakdown by Functional Areas 27

II. Members of the National Technical Advisory Committee for the Nursing Occupations 47

Contents (continued) Page

III. Format for Nursing Occupations Instructional Units 49

IV. General Considerations for Planning an Effective Management System for Utilization of Stage I Nursing Instructional Units 51

A Suggested System for Implementing Individualized Instruction in a Classroom Setting 53

Model Showing Operation of System With Two Parallel Courses, Course A and Course B 54

General Instructions for the Faculty on Administration of Performance Tests 55

General Instructions to Students Taking Performance Tests 56

Form I 57
Form II 58
Form III 59
Form IV 60

V. Field-Testing Program for the Nursing Occupations 61

VI. Table of Instructional Units Encompassed in Stage I and Stage II 65

VII. Sample Teacher's Guide 69

Diagnostic Test 71
Annotated Answer Sheet 72
Performance Checklist 73

VIII. Sample Instructional Unit: "Handwashing Technique for Medical Asepsis" . . . 75

The Gastroenterology Assistant: A Laboratory Manual

This manual presents in step-by-step detail the basic diagnostic procedures used in the Gastroenterology Laboratory. As a reference in this setting, it will help to establish standard procedures and serve as an instructional handbook for inservice training of assistants in the clinical setting. It can also be used for formal instruction in medical schools and for refresher training in continuing education programs.

CONTENTS

Page

Foreword – Melvin L. Barlow v
Preface ix

Introduction 3
Gastric Analysis 4
Insulin Gastric Analysis (Hollander Test) 14
Saline Load Test 17
Intraesophageal Acid Drip Test (Bernstein Test) 20
Intragastric Acid Drip Test (Palmer Test) 25
Duodenal Drainage 29
Provocative Pancreatic Enzyme Test 40
Collection for Gastric Cytology 41
Collection for Esophageal Cytology 45
Collection for Duodenal Cytology 47
Collection for Colon Cytology 48
Small Bowel Biopsy 50
String and Tube Tests for Gastrointestinal Bleeding 55
Assisting in Gastrointestinal Endoscopy 59
Assisting in Esophageal Dilatation 67
Assisting With Proctoscopic Examination 70
Chemical Testing for Occult Blood 74

Appendix 75

A Manual for Lower Extremities Orthotics

Developed by four expert orthotists, this manual covers the fabrication and fitting of various orthopedic shoe modifications and a number of different types of below-knee and above-knee orthoses (braces). The illustrated step-by-step directions make the manual practically self-instructional, and thus it is readily adaptable to individual instruction.

CONTENTS

Page

Foreword v
Preface ix

Chapter

1. External Shoe Modifications 3
2. Internal Shoe Modifications 114
3. Foot and Ankle Orthotic Devices 139
4. Below-Knee Orthoses 215
5. Above-Knee Orthoses 328
6. Knee Orthoses 440
7. Hip Orthoses 471

Appendix 511

Medical Record Filing (Terminal Digit and Alphabetical)

This self-instructional module has been tested extensively, and students using it can master the task of medical record filing rapidly with little or no help from the teacher. The student uses the 100 practice file cards to "learn by doing," following the programmed step-by-step procedure in the manual.

Contents, Assembling, and Analyzing Deficiencies of Medical Records

A pocket in the back cover contains two practice file folders and 68 completed medical record forms. The forms were taken from actual medical records, with only the identifying names and numbers changed.

The instructions in this manual accompany the patient from his first contact with the hospital until he is discharged, adding new medical records at each step. The reasons for each record, its importance, and how to handle it are explained as the student follows the patient's progress. After all the medical records have been accumulated, the student learns how to assemble them in correct sequence. Finally, he learns how to analyze a completed file for deficiencies and how to handle them. This module is almost entirely self-instructional, although teacher assistance has been necessary chiefly where the local hospital system differs in some respects from the typical system followed in the module. It has been found that teachers can help students make this adaptation more readily.

CONTENTS

FOREWORD iii

PREFACE vii

PART ONE: CONTENTS OF A MEDICAL RECORD

- I. Introduction 3
  - A. Design of Part One 3
  - B. Procedure 3
- II. Purpose of a Medical Record 5
- III. Growth of a Medical Record 7
  - A. Review 1 15
  - B. Review 2 29
  - C. Review 3 31
  - Special Forms 37

PART TWO: ASSEMBLING A MEDICAL RECORD 39

- I. Introduction 41
  - A. Design of Part Two 41
  - B. Procedure 41
- II. Process of Assembling a Medical Record 43
  - A. Straight Matching 43
  - B. Unequal Matching 43
  - C. Chronology 44
  - D. Blocks 45

PART THREE: ANALYZING A MEDICAL RECORD FOR DEFICIENCIES 47

- I. Introduction 49
  - A. Requirements of a Medical Record 49
  - B. Design of Part Three 50
  - C. Procedure 50
- II. Level One Checking 51
  - A. Completeness 51
  - B. Accuracy 53
- III. Review (Level One) 53
- IV. Level Two Checking 85
  - A. Completeness 85
  - B. Accuracy 87
- V. Review (Level Two) 89
- VI. Level Three Checking 109
  - A. Completeness 109
  - B. Accuracy 109

Contents (continued)

C. Terminology 112
D. Laboratory Abbreviations 112
E. Other Abbreviations 113
F. Numbers and Symbols 116
VII. Review (Level Three) 117
VIII. Remedying Deficiencies 136

Instructional Units for Medical Transcribers (with accompanying tape cassettes)

This series of medical terminology self-instructional modules has proven in use to be an efficient means for helping the student to learn quickly how to recognize both the written word and the spoken word, how to pronounce the word, and how to understand the meaning and significance of the word. This is accomplished by combining an illustrated manual that explains the meaning and function of each term with a tape cassette that pronounces each word correctly, concluding with a number of actual medical record dictations for practice. Originally designed to train medical record transcriptionists quickly and thoroughly, the module has shown itself to be highly effective in accomplishing this goal. It does not depend on the old-fashioned rote memorization of roots, prefixes, and suffixes which students find boring; instead, each word is related to its function in the body and its relation to other words that identify other parts of the body. While learning the nomenclature, the student automatically learns about anatomy, pathology, and so on. For this reason, the series has become popular with other allied health occupations students and might almost be said to constitute a "core" course in medical terminology from which they can all benefit. We intended the tape cassettes primarily for the typist to use in practicing transcription on the typewriter. However, we discovered that other students found them valuable in learning correct pronunciation and in recognizing the words when they hear them spoken.

The complete series will consist of nine manuals and tape cassettes, each covering a different body system. Those now available are:

Circulatory System Text
Circulatory System Tape Cassette
Digestive System Text
Digestive System Tape Cassette
Respiratory System Text
Respiratory System Tape Cassette
Musculoskeletal System Text
Musculoskeletal System Tape Cassette
Genitourinary System Text
Genitourinary System Tape Cassette
Nervous System Text
Nervous System Tape Cassette

The status of the three modules that complete the series:

Organs of Sight and Sound, now being edited, reviewed, revised, available in September 1973.
Endocrine System, being written; available probably in November 1973.
Integumentary System, not started; probably available in January 1974.

Health-Care Facility Purchasing

This self-instructional manual was the first of two planned to provide training for assistants in hospital purchasing departments. The instructional materials encompassed in the purchasing modules are based on the results of the survey conducted by the AHPP on task performance in the field of purchasing, which is one of several facility support services involved in this curriculum development program. AHPP surveyed 48 facilities across the United States, and included extended-care facilities as well as hospitals of various sizes. The survey respondents represented a geographical cross-section of the entire country. For each instructional module, survey results have been analyzed in detail with respect to the persons who perform the tasks to be taught.

The materials are presented in two separate volumes, each of which contains seven modules, as follows:

Unit I:

Module 1.	Identify and Verify the Need
Module 2.	Prepare the Requisition
Module 3.	Approve the Requisition
Module 4.	Review and Edit the Requisition
Module 5.	Determine the Source of Supply
Module 6.	Place the Order
Module 7.	Follow Up and Expedite the Order

Unit II:

Module 8.	Receive and Inspect Materials and Services
Module 9.	Return Materials to the Vendor and Outgoing Shipments
Module 10.	Issue the Storeroom Stock Requisition
Module 11.	Control the Inventory
Module 12.	Process the Invoice
Module 13.	Maintain the Records
Module 14.	Dispose of Surplus Materials

The above unit was not completed due to lack of funds. Without it to accompany the first unit, the value of this entire effort has diminished.

Dental Hygiene: Detection and Removal of Calculus

Containing five modules selected by the National Technical Advisory Committee for the Dental Auxiliary Occupations and the American Dental Hygienist Association Committee on Dental Hygiene Education as the most urgently needed, this manual covers:

MODULE I: FUNDAMENTAL SKILLS FOR INSTRUMENTATION

A. General Characteristics of Dental Hygiene Instruments
B. Grasping the Instrument
C. Establishing a Finger Rest
D. Inserting the Instrument
  (1) Inserting the Explorer
  (2) Inserting the Curette
E. Adapting or Angulating the Instrument
F. Activating a Stroke
  (1) Activating an Exploratory Stroke With an Explorer
  (2) Activating an Exploratory Stroke With a Curette
  (3) Activating Working Strokes With a Curette

MODULE II: THE DETECTION OF CALCULUS AND PERIODONTAL POCKETS

A. Detecting Calculus With the Mirror and Explorer
B. Detecting Periodontal Pockets With the Periodontal Probe
C. Using Compressed Air
D. Detecting Calculus on Radiographs

MODULE III: THE REMOVAL OF LIGHT TO MODERATE CALCULUS

A. Removing Calculus With the Curette
B. Removing Calculus With the Straight Sickle
C. Removing Calculus With the Modified Sickle

MODULE IV: THE REMOVAL OF HEAVY CALCULUS

A. Planning the Sequence of Procedures for a Series of Appointments
B. Removing Calculus With the Hoe
C. Removing Calculus With the File
D. Removing Calculus With Ultrasonic Scaling Devices
E. Use of Topical and Local Anesthetics
F. Post-Operative Instructions

MODULE V: ROOT PLANING PROCEDURE

A. Root Planing With the Curette
B. Use of Reinforced Finger Rests
C. Use of Local Anesthetics
D. Desensitizing Hypersensitive Root Surfaces

Written in the same task-oriented format as other AHPP manuals, *Dental Hygiene* provides such minute detail combined with photographic illustrations that it is practically self-instructional. Each module provides general and specific performance objectives, directions to the student for use of the module, and performance checklists. A teacher's guide is supplied free of charge.

Fundamental Dental Laboratory Procedures

This unit of individualized instructional materials is designed to teach students to perform those fundamental dental lab procedures which are common to all three of the dental auxiliary occupations. The three modules in this unit are:

Module I:	Pouring Impressions and Trimming Dental Casts
Module II:	Fabricating Custom Impression Trays for Complete Dentures
Module III:	Fabricating Custom Impression Trays for Partial Denture and Quadrant Impressions

Each module begins with a general introduction, statements of prerequisites and performance objectives, and directions for use of the module. An intermediate test follows the introduction. The illustrated step-by-step procedure makes up the main body of the module. This section is followed by a comprehensive post-test with an accompanying answer key. Since all important concepts related to each particular skill are included in the module, the need for a lecture before the laboratory period is virtually eliminated. The student spends most of the period working and learning independently, and the teacher is therefore free to provide direct individual instruction. The performance check ensures that each student has mastered all necessary skills before moving on to more complex procedures.

Published and distributed by the project, this unit was submitted to commercial publishers; however, inasmuch as the additional units to round out the curriculum could not be developed because of lack of funds, the materials in Unit I were not considered to be commercially valuable.

Fundamental Skills in the Clinical Laboratory: Specimen Processing
(Student's Manual and Teacher's Guide)

This task-oriented, self-instructional manual is based on the part of the curriculum design that was developed for training laboratory assistants. It covers in explicit detail, clearly illustrated, how to draw blood, collect clinical specimens, and handle clinical specimens. Specific performance objectives precede every module, and each is followed by a performance test, a performance checklist, an enrichment section where appropriate, and references for further study.

The teacher's guide is designed for use with the student's manual. It contains information on how to use the modular approach in teaching the instructional units. Methods for gathering evaluative data are suggested, including tests and evaluation forms.

These two books were published by AHPP and distributed on a trial basis. Since they were designed to be part of a total instructional package, they were not offered to a commercial publisher at the outset because funds were not available to pursue the completion of this package. However, the additional units have now been finished, and a complete two-volume work is in the process of evaluation by commercial publishers. The contents of these two volumes are as follows:

UNIT I: INTRODUCTION TO LABORATORY MEASUREMENTS

Subunit A: Volume Measurements

Module 1. Cleaning Laboratory Glassware
Module 2. Using Beakers and Flasks
Module 3. Using Graduates
Module 4. Preparing Solutions
Module 5. Using Pipets
Module 6. Calibrating Medicine Droppers
Module 7. Calculations for Preparing Percent Solutions
Module 8. Calculations for Preparing Molar and Normal Solutions

Subunit B: Weight Measurements

Module 9. Adjusting and Zeroing the Balance
Module 10. Weighing With a Balance
Module 11. Determining the Sensitivity of the Balance.

UNIT II: INVENTORY OF SUPPLIES

Module 1. Taking Inventory
Module 2. Establishing a Minimum Daily Level

UNIT III: SPECIMEN PROCESSING

Page

Foreword iii
Acknowledgments v
Preface ix
Subunit A: Collecting Clinical Specimens 1
  General Comments 1
  Vocabulary for Subunit A 2
  Module 1. Collecting Blood 9
  Module 2. Collecting Urine 79
  Module 3. Collecting Other Clinical Specimens 93
  Appendix:
    Table 1. Blood Required for Chemical Analysis, Macro Tests 107
    Table 2. Guide for Proper Specimen Tube Selection 110
    Table 3. Blood for Hematologic Analysis 112
  References for Subunit A 115

Subunit B: Preparing Clinical Specimens 117
  General Comments 119
  Vocabulary for Subunit B 120
  Module 1. Labeling Clinical Specimens 125
  Module 2. Distributing Clinical Specimens 139

- Appendix: Selected Laboratory Procedures in Various Laboratory Departments 157
- Module 3. Logging Clinical Specimens 159
- Module 4. Separating Clinical Specimens 173
- Module 5. Preparing Clinical Specimens for Mailing 209

Appendix:

  - Tests Not Usually Performed in the Clinical Laboratory 241
  - Excerpt From Postal Manual 242
  - Laboratory Information and Patient History Form 244
  - Mailing of Microbiological Specimens 247
- References for Subunit B 255

UNIT IV: MEDIA PREPARATION

- General Comments 259
- Vocabulary 260
- General Information 264
  - A Brief Review of Bacteria 264
  - Infection and Contamination 265
  - Media: Their Use and Preparation 266
  - The "Media Room" or Work Area 267
- Module 1. Processing Culture Media 271
  - Preparing a Solution of the Medium 272
    - Procedure: Preparing a Solution of the Medium 275
  - Additional Instructions 283
  - Heating the Medium to Obtain a Solution 284
    - Procedure: Heating the Medium to Obtain a Solution 289
  - Additional Instructions 295
  - Sterilizing the Medium 295
  - Examining Media for Contamination 302
    - Procedure: Examining Media for Contamination 302
  - Disposing of Used and Old Culture Media 305
    - Responsibility for Disposal 305
    - Handling Contaminated Items 306
- Module 2. Preparing Tubed Media 311
  - Distributing Medium to Culture Tubes 312
    - Procedure: Distributing Medium to Culture Tubes 316
  - Sterilizing Tubed Media 323
  - Cooling Sterilized Tubed Media 324
    - Procedure: Cooling Sterilized Tubed Media 325
- Module 3. Preparing Plate Media 331
  - Cooling Sterilized or Heated Flask Medium 331
    - Procedure: Cooling Sterilized Flask Medium 336
      - Room Temperature Cooling 336
      - Water Bath Cooling 338
  - Distributing Sterilized Flask Medium Into Culture Plates 343
    - Procedure: Distributing Sterilized Flask Medium Into Culture Plates 346

Review Questions 352
Answer Key 356
Appendix 363
Flow Sheet Instructions 363
Synopsis Sheets of Bacteriological Media 366
Enrichment 393

D. INSTRUCTIONAL MATERIALS FOR THE SECONDARY SCHOOLS ALLIED HEALTH PROJECT

Evaluative Report on Phase I of the Secondary Schools Allied Health Project for an Introduction to the Allied Health Professions, 1971

To the extent that the findings of this study are valid, the following conclusions may be justified:

1. Student progress toward achievement of each of the following performance objectives of Phase I of the Secondary Schools Project was made to a satisfactory extent or better:

   Ability to tell what workers do in several allied health occupations

   Ability to make a wise vocational choice

   Ability to explain steps necessary to enter an allied health job

   Demonstration of knowledge about how health-care facilities operate

   Ability to maintain own health through the use of appropriate health care

   Ability to refer family and friends to appropriate health-care facilities

   Ability to perform basic skills in selected allied health occupations

   Ability to identify and describe the functions of specific equipment used in the health-care system

   Demonstration of behavior appropriate to the world of work (dependability, attendance, personal appearance, etc.)

2. The wide variety of curriculum topics, health-care tasks, learning experiences, and teaching methods which were included in the program was amply justified by the equally wide variety of interests and abilities found on the part of students enrolled in the project.

3. There was a slight positive relationship between student participation in the program and grade-point averages, particularly for low-ability and middle-ability students.

4. Ninth-grade students who were selected to participate in the project during the ensuing year were considerably less likely to drop out or transfer from their schools prior to entering the tenth grade than were students in a control group.

5. Enthusiasm for the Secondary Schools Project was widely expressed by national experts in the field of health care as well as by student participants and their parents.

Recommendations — On the basis of the findings and conclusions of this study, the following recommendations are made:

1. That the UCLA AHPP Secondary Schools Pilot Project be used as a model for similar programs in other high schools throughout the United States.

2. That the concepts and practices underlying the UCLA AHPP Secondary Schools Pilot Project, relative to establishing close interrelationships between education and the world of work, be applied experimentally to a number of other fields in addition to that of health-care services.

3. That in the subsequent offerings of Phase I of the UCLA AHPP Secondary Schools Pilot Project, the following steps be taken:

   a. Particular attention should be given to overcoming or reducing problems and weaknesses found in the initial offering of Phase I.

   b. Greater emphasis should be placed on the use of diagnostic tests at the beginning of the year and on continuous measurement thereafter of individual progress in achieving stated performance goals of the project.

   c. Greater research effort should be made to determine cause-effect relationships between specific aspects of the program and outcomes thereof in terms of pupil performance.

4. That in the course of offering Phase II of the UCLA AHPP Secondary Schools Pilot Project (a year of work experience in health-care facilities for students who have completed Phase I), findings of this study serve as an important basis for both corrective and developmental activity.

Evaluative Report on Phase II of the Secondary Schools Allied Health Project for an Introduction to the Allied Health Professions, 1972.

To the extent that the findings of this study are valid, the following conclusions may be justified:

1. During Phase II of the program, continuing student progress toward achievement of each of the following performance objectives of the Secondary Schools Project was made to a satisfactory extent or better:

   Ability to tell what workers do in several allied health occupations

   Ability to make a wise vocational choice

Ability to explain steps necessary to enter an allied health job

Demonstration of knowledge about how health-care facilities operate

Ability to maintain own health through the use of appropriate health care

Ability to refer family and friends to appropriate health-care facilities

Ability to perform basic skills in selected allied health occupations

Ability to identify and describe the functions of specific equipment used in the health-care system

Demonstration of behavior appropriate to the world of work (dependability, attendance, personal appearance, etc.)

2. The ethnic composition of Phase II students was appreciably different from that of Phase I students; a considerably larger percentage of Blacks and Mexican-Americans and a considerably smaller percentage of Whites and Asiatics were enrolled in Phase II of the program than had been enrolled in Phase I.

3. The ability levels of students in Phase II of the project were somewhat less diverse than they had been in Phase I; a larger percentage of students of middle-level ability and a smaller percentage of students of either upper-level or lower-level ability were enrolled in Phase II of the program than had been enrolled in Phase I.

4. There was a positive relationship between the students' participation in Phase II of the program and their grade-point averages; this correlation was similar to that which was identified in Phase I.

5. Students who participated in the project were appreciably less likely to drop out of school or to transfer to another school than were nonparticipants in a control group.

6. Enthusiasm regarding the nature and outcomes of Phase II of the Secondary Schools Pilot Project was widely expressed by the student participants in the project, by their parents, and by hospital personnel who supervised the students' work.

7. The hospital supervisors and the Deputy Director of the Secondary Schools Project were in nearly complete agreement as to what improvements should be made in the operation of Phase II of the program. Among the needed improvements they agreed upon, the most important were the following: increased preparation of students, during Phase I, for accountability regarding absence from work; increased emphasis on orientation of hospital personnel to the program; provision of preservice and inservice education of hospital personnel involved in the program; increased communication between hospital personnel and project coordinators; and development of clear and specific statements of expectations of functions to be performed by hospital personnel in the performance of their student training function.

Recommendations – On the basis of the findings and conclusions of this study, the following recommendations are made:

1. That Phase II of the UCLA AHPP Secondary Schools Pilot Project serve as a model for the second-year program of similar projects in other high schools throughout the United States.

2. That the concepts and practices underlying Phase II (as well as Phase I) of the UCLA AHPP Secondary Schools Pilot Project, relative to establishing close interrelationships between education and the world of work, be experimentally applied to a number of other occupational fields in addition to that of health-care services.

3. That in subsequent offerings of Phase II of the UCLA AHPP Secondary Schools Pilot Project, the following steps be taken:

   a. Criteria for assignments of students to work experiences in health-care facilities should be more clearly specified. Among the criteria should be not only student interest but also student maturity, student need, job opportunities, and job requirements.

   b. Greater emphasis should be placed on the orientation, preservice education, and inservice education of hospital personnel involved in the occupational training of students.

   c. Closer and more continuous communication between the project staff and hospital personnel should be developed and maintained.

   d. The occupational training experiences of students should be more fully structured and should be based on lists of tasks related to each of the health-care occupations to which the students are assigned.

   e. Responsibilities and performance expectations of students, hospital supervisors, project coordinators, and all other personnel involved in the successful operation of this phase of the program should be more clearly and specifically detailed.

4. That in Phase III of the UCLA AHPP Secondary Schools Pilot Project (1972-1973), the findings of this study serve as an important basis for both corrective and developmental activity in the further achievement of the performance objectives of the total program.

A New Source of Manpower, a 20-page illustrated booklet explaining the Secondary Schools Allied Health Program's purposes and manner of operation.

Introduction to Allied Health Careers, Teacher's Manual and Student's Manual.

These manuals cover a one-year Introduction to Allied Health Careers – the first phase of a three-phase curriculum, "The Health-Care System."

Phase I – Tenth-grade school year: Introduction to Allied Health Careers

1. Field trips and field experiences in health-care facilities, integrated with classroom experience.
2. Opportunity provided for exploratory work experience.
3. Tutorial assistance for students, as needed.

Phase II – Work Study

1. Students who have completed the first year of the program participate in further work experience training within a health-care facility setting.
2. Students begin to make choices and receive training in specialized occupations.

Phase III – Optional Cooperative Education Plan

1. Students will be assisted in finding part-time employment if desired, or directed into specialized occupational training.
2. Students will be assisted in developing upward mobility skills on the career ladder.
3. Students enrolled in a college preparation course may choose not to enter Phase II or III of this program in order to complete college entrance requirements.

Phase I consists of the three modules making up these manuals, each dealing with a chronologically and procedurally distinct aspect of the school year.

Module I, "Orientation to the Health-Care System," offers an overview of health-care facilities, occupations, problems and practices, and includes field trips to facilities in the community.

Module II, "Meeting the Needs of the Patient Through the Health-Care System," presents fictitious case histories through which students are introduced to the ways in which health-care personnel function in caring for patients, and to the knowledge and skills needed for each task.

Module III, "Working in the Health-Care Community," is built around a four-week period in which students actually work in a health-care facility. A unit of preparation preceding the work period and a summation unit following it complete the module.

Program Guide for Development and Operation of Secondary School Allied Health Career Programs

The Secondary School Allied Health Career Program is simple enough to administer once it is set up and going, but to many school people who are not familiar with hospitals and health-care occupations, getting the program started is a difficult problem.

The Program Guide is very helpful to the teacher and coordinator because it gives explicit, detailed instructions for every step in establishing a new program and keeping it going.

CONTENTS

	Page
Foreword	iii
Preface	v
Introduction	ix
Chapter One: Preparation	1
Chapter Two: Setting Up the Program in the School	15
Chapter Three: Setting Up the Program in the Hospital	27
Chapter Four: Recruiting and Selecting Students	33
Chapter Five: Phase I	47
Chapter Six: Phase II	91
Chapter Seven: Phase III and Followup	137

Student Training Record Booklets

Small booklets listing the tasks that the students should learn in the hospital. When a task is mastered, the on-the-job instructor signs and dates it, thus providing the student with a record of his accomplishments which becomes valuable when applying for a job or admission to a higher level school for additional training.

Available for 46-a, nurse aide; 46-b, central service; 46-c, hospital business office; 46-d, inhalation therapy aide; 46-e, personnel training; 46-f, hospital refrigeration and air conditioning; 46-g, pharmacy aide; 46-h, occupational therapy aide; 46-i, social worker aide; 46-j, physical therapy aide; 46-k, radiology aide; 46-l, clinical laboratory assistant.

E. MISCELLANEOUS PUBLICATIONS

The UCLA Allied Health Professions Project: The Background, the Programs, the People, 1970. A 20-page informational booklet explaining the purposes and methods of the project's operation.

Clinical Instructor Training Program Trainer's Manual

This manual is a short, intensive training course for allied health personnel in how to teach on the job or in the clinical setting. The manual gives the trainer complete instructions for conducting the program.

COURSE OUTLINE OF THE
CLINICAL INSTRUCTOR TRAINING PROGRAM

SESSION I – 2 hours

I Opening the Session
II Demonstrating Faulty Instruction
III Demonstrating Correct Instruction
IV Concluding Session

SECTION II – 2 hours

I Opening the Session
II Making a Job Breakdown
III Making a Course Outline
IV Having the Right Equipment, Materials and Supplies
V Having the Workplace Properly Arranged

SECTION III – 2 hours

I Opening the Session
II The Four Tools of Instruction
III Habit Formation
IV Conduct 3 Practice Instruction Demonstrations
V Summing Up

SECTION IV – 2 hours

I Opening the Session
II Basic Science and Technical Information
III Continue Practice Instruction (4)
IV Summing Up

SECTION IV-A – 2 hours (extra session for enrollment over 12)

I Purpose of IV-A
II Setting Up Session IV-A

SECTION V – 2 hours

I Opening the Session
II Practice Demonstrations (3)
III Summing Up
IV Action To Be Taken by Members
V Conclusion

F. DISTRIBUTION OF INSTRUCTIONAL MATERIALS

July 1973

Title	Printed	On Hand	Distributed
Occupational Analysis: Engineering Maintenance	450	111	339
Occupational Analysis: Hospital Food Service Dept.	1050	551	499
Occupational Analysis: Medical Office Assistant	1050	161	889
Occupational Analysis of Tasks Performed in a Medical Record Department	1050	88	962
Medical Record Filing (Terminal Digit and Alphabetical)	600	250	350
Medical Record Content, Assembly and Check	400	300	100
Circulatory System (text)	800	300	500
Circulatory System Audio Tape Cassette			
Digestive System (text)	800	185	615
Digestive System Audio Tape Cassette			
Respiratory System (text)	800	354	446
Respiratory System Audio Tape Cassette			
Musculoskeletal System (text)	600	311	289
Musculoskeletal System Audio Tape Cassette			
Genitourinary System (text)	400	135	265
Genitourinary System Audio Tape Cassette			
Nervous System (text)			
Nervous System Audio Tape Cassette			
A Survey of Practices in Hospital Pharmacies	250	154	96
A Study of Purchasing Occupations in Health-Care Facilities	450	126	324
Health-Care Facility Purchasing, Unit I	100	–	100
Occupational Analysis: Ward Administration	450	130	320
A Study of the Electroencephalographic Technician's Occupation	500	190	310
A Study of the Clinical Laboratory Occupations	700	238	462
A Model of Individualized Instruction for Clinical Laboratory Occupations	600	130	470
Unit: Specimen Processing: Instructor's Guide	450	74	376
Student Manual	600	227	373
The Dental Auxiliary Occupations (Occupational Analysis)	750	127	523
Fundamental Dental Laboratory Procedures	450	102	348
Dental Hygiene: Detection and Removal of Calculus	1600	17	1583
A Study of an Emerging Occupation: The Gastroenterology Assistant	275	210	65
The Gastroenterology Assistant: A Laboratory Manual	200	–	200

Title	Printed	On Hand	Distributed
Physician's Assistant Survey Report	200	10	190
A Study of Nursing Occupations	850	150	700
A Career Model for the Nurse Practitioner	1900	280	1620
Nursing Skills for the Allied Health Services (2 volumes)			
Manual of Lower Extremities Orthotics	2036	1336	700
Occupational Analysis: Hospital Radiologic Technologist	550	155	395
Occupational Analysis: Respiratory Care/Inhalation Therapy	750	75	675
Occupational Analysis of Social Services in Medical-Care Facilities	550	195	355
Evaluative Report on Phase I of the Secondary Schools Project for an Introduction to the Allied Health Professions	1950	–	1950
Evaluative Report on Phase II of the Secondary Schools Project for an Introduction to the Allied Health Professions	500	–	500
A New Source of Manpower	3000	–	3000
Secondary Schools First-Year Curriculum:			
Teacher's Manual (pilot edition)	800	120	680
Student Manual (pilot edition)	1150	19	1131
Program Guide – A Guide for Development and Operation of a Secondary School Allied Health Career Program	500	105	395
Student Training Record Booklets:			
Nursing	1100	11	1089
Central Service	300	20	280
Hospital Business Office	300	3	297
Inhalation Therapy Aide	300	2	298
Personnel Training	300	36	264
Refrigeration and Air-Conditioning	300	18	282
Pharmacy Technician	300	18	282
Occupational Therapy Aide	300	33	267
Social Worker Aide	300		
Radiology Aide	300	29	271
Clinical Lab Aide	200	13	187
Physical Therapy Aide	300	56	244
Allied Health Professions Project Task Inventories	1250	42	1208
Clinical Instructor Training Program Trainer's Manual (circle one: English, Spanish, Japanese)	750	244	506
Final Report, Clinical Instructor Training Program	1000	224	776

G. EXPENDITURES AND INCOME FROM PUBLICATIONS

Hundreds of publications were distributed at the outset of the project without charge to advisory committee members, government agencies, cooperating institutions, professional publications, and to participants in workshops and seminars. However, by September 1971, the demand for these materials far exceeded the financial resources of the project to continue distribution on a free basis. A price list was compiled, listing the publications and the cost of each, and was given wide distribution. In addition, numerous press releases describing each publication were sent to journals and newsletter editors. The result was a gradually increasing income from sales of the publications. These funds were put into a publications account for use in paying for reprints of publications as supplies were exhausted. Prices were established to cover the costs of printing, handling, and shipping.

The record of sales by months beginning with May 1972:

May 1972	$2,350.65
June	2,779.11
July	3,799.51
August	3,909.68
September	5,978.97
October	3,542.21
November	1,873.45
December	2,436.55
[illegible]nuary 1973	2,770.75
February	1,989.18
March	4,247.95

H. DISTRIBUTION OF PUBLICATIONS BY TYPE OF INSTITUTION

It was not possible to break down sales of publications to institutions by titles of individual items, but the purpose of indicating the degree to which each type of institution purchased the materials is served by tabulating the numbers of orders received from each type. This does not include distribution of materials published for us by commercial publishers.

Institutions	Number of Orders
Junior colleges	417
Medical schools	342
Hospitals	478
High schools	79
Federal agencies	52
State agencies	201
Local government agencies	88
Individuals	192

I. DISTRIBUTION OF PUBLICATIONS BY STATES

The distribution of publications to states is by order, not individual publication.

State	Total Distribution	State	Total Distribution
Alaska	9	New York	127
Arizona	24	North Carolina	36
Arkansas	8	North Dakota	7
California	377	Ohio	77
Colorado	28	Oklahoma	21
Connecticut	28	Oregon	42
Delaware	13	Pennsylvania	71
D.C.	26	Rhode Island	7
Florida	37	South Carolina	32
Georgia	49	South Dakota	17
Hawaii	9	Tennessee	18
Idaho	8	Texas	47
Illinois	115	Utah	10
Indiana	40	Vermont	7
Iowa	18	Virginia	27
Kansas	25	Washington	52
Kentucky	17	West Virginia	11
Louisiana	9	Wisconsin	44
Maine	8	Wyoming	3
Maryland	35	Guam	3
Massachusetts	56	Puerto Rico	6
Michigan	69	Virgin Islands	0
Minnesota	51	Canada	53
Mississippi	13	Germany	1
Missouri	31	South America	2
Montana	10	Australia	2
Nebraska	13	Africa	3
Nevada	6	Switzerland	1
New Hampshire	4	England	4
New Jersey	52	Holland	4
New Mexico	13	Netherlands	1

J. ADOPTION OF AHPP BY SCHOOLS FOR SCHOOL USE

As of May 1, 1973, the project had produced and was distributing eight items of instructional material that could be used by students. Those for nursing, dental hygiene, and medical records have been available for the longest period of time, and although all the projected modules have not been completed for any of them, the number of schools that have adopted the material available is significant.

W.B. Saunders Co. published *Nursing Skills for the Allied Health Services* in two volumes in May 1972. As of January 1, 1973, they reported sales totaling 13,500 of each volume. Purchases by schools in amounts indicating adoption for class use totaled 140. The list of specific schools adopting the books follows. Saunders has advised us that this list may be incomplete, inasmuch as many schools buy books through local bookstores and information about purchases of these books for class use is therefore unavailable.

Nursing Skills for Allied Health Services, Volumes I and II

The following is a list of programs where the Wood books have been adopted; the list is arranged according to type of program adopting.

Baccalaureate Degree:

- College of Alameda, Alameda, California
- Durham College, Durham, California
- University of California, San Francisco, California
- University of Florida, Miami, Florida
- Rend Lake College, Ina, Illinois
- University of Evansville, Evansville, Indiana
- Northwestern State University, Natchitoches, Louisiana
- Louisiana State University, New Orleans, Louisiana
- Grand Valley State College, Allendale, Michigan
- Alfred University, Alfred, New York
- Minot State College, Minot, North Dakota
- Ohio Northern University, Ada, Ohio
- Oklahoma Baptist University, Shawnee, Oklahoma
- University of Washington, Seattle, Washington

Associate Degree:

- Cabrillo College, Aptos, California
- Grossmont College, El Cajon, California
- Los Angeles Southwest College, Los Angeles, California
- Napa College, Napa, California
- College of the Desert, Palm Desert, California
- Santa Monica College, Santa Monica, California
- Solano Community College, Suisun City, California
- Rio Hondo College, Whittier, California

Associate Degree (continued):

El Paso Community College, Colorado Springs, Colorado
Community College of Denver, Denver, Colorado
Otero Junior College, La Junta, Colorado
Santa Fe Junior College, Gainesville, Florida
Central Florida Junior College, Ocala, Florida
Dalton Junior College, Dalton, Georgia
Harper College, Palatine, Illinois
Southwestern Michigan College, Dowagiac, Michigan
Grand Rapids College, Grand Rapids, Michigan
Pearl River Junior College, Poplarville, Mississippi
Fairburg Junior College, Fairburg, Nebraska
College of St. Mary, Omaha, Nebraska
University of New Mexico, Albuquerque, New Mexico
Jamestown Community College, Jamestown, New York
Pace College, New York City
Wayne Community College, Goldsboro, North Carolina
James Sprunt Technical Institute, Kenansville, North Carolina
Caldwell Community College and Technical Institute, Hudson, North Carolina
Western Piedmont Community College, Morganton, North Carolina
Beaufort County Technical Institute, Washington, North Carolina
North Dakota State University, Fargo, North Dakota
Kettering College of Medical Arts, Kettering, Ohio
Rogue Community College, Grant's Pass, Oregon
Westmoreland County Community College, Youngswood, Pennsylvania
Montgomery County Community College, Blue Bell, Pennsylvania
La Follette Community College, La Follette, Tennessee
Memphis State University, Memphis, Tennessee
Everett Community College, Everett, Washington
Columbia Basin College, Pasco, Washington
Southern West Virginia Community College, Williamson, West Virginia

Diploma Programs:

Culver West Convalescent Hospital, Los Angeles, California
Holy Cross Hospital, Mission Hills, California
Milford Memorial Hospital, Milford, Delaware
Grady Memorial Hospital, Atlanta, Georgia
Confederate Memorial Medical Center, Shreveport, Louisiana
Eastern Maine General Hospital, Bangor, Maine
Mercy Hospital, Portland, Maine
Frederick Memorial Hospital, Frederick, Maryland
Carney Hospital, Boston, Massachusetts
Holyoke Hospital, Holyoke, Massachusetts
Coahoma County Hospital, Clarksdale, Mississippi
Forrest County General Hospital, Hattiesburg, Mississippi
Incarnate Word Hospital, St. Louis, Missouri

Diploma Programs (continued):

- Mountain Sanitarium and Hospital, Fletcher, North Carolina
- Lenoir Community College, Kinston, North Carolina
- Memorial Hospital, Danville, Pennsylvania
- Thomas Jefferson University, Philadelphia, Pennsylvania
- Wilkes Barre General Hospital, Wilkes Barre, Pennsylvania
- Sumner Memorial Hospital, Gallatin, Tennessee

LVN/LPN Programs:

- Muscle Shoals Technical Institute, Muscle Shoals, Alabama
- Butte Junior College, Durham, California
- Merced Junior College, Merced, California
- Chaffey Union High School District, Ontario, California
- A.D. Prince Regional Vocation-Technical School, Hartford, Connecticut
- American Vocational Association, Washington, D.C.
- Anne Burdick Vocational High School, Washington, D.C.
- Washington Technical Institute, Washington, D.C.
- Manatee Technical Center, Bradenton, Florida
- Sarasota County Vocational Technical School, Sarasota, Florida
- Athens Technical School, Athens, Georgia
- Carroll County Technical School, Carroll County Area Vocational School, Carrollton, Georgia
- Coosa Valley Vocational-Technical School, Rome, Georgia
- Valdosta Area Vocation-Technical School, Valdosta, Georgia
- Caldwell Memorial Hospital, Caldwell, Idaho
- St. Mary's Hospital, La Salle, Illinois
- New Athens Community Unit, New Athens, Illinois
- Indianapolis School of Practical Nursing, Indianapolis, Indiana
- Area One Vocational-Technical School, Dubuque, Iowa
- Dodge City Community College, Dodge City, Kansas
- Flint Hills Area Vocational-Technical School, Emporia, Kansas
- Ahrens Vocational Technical High School, Louisville, Kentucky
- Jeffersontown County Area Vocational School, Jeffersontown, Kentucky
- Alexandria Trade School, Alexandria, Louisiana
- Sullivan Vocational-Technical School, Bogalusa, Louisiana
- Jefferson Parish Vocational-Technical School, Metairie, Louisiana
- Shreveport-Bossier Vocational Technical School, Shreveport, Louisiana
- Baltimore City Hospital, Baltimore, Maryland
- Washington County Vocational Technical Center, Hagerstown, Maryland
- College Area Skill Center, Grand Rapids, Michigan
- Gogebic Community College, Ironwood, Michigan
- Anoka-Hennepin School, Anoka, Minnesota
- Elko Community College, Elko, Nevada
- Washoe Medical Center, Reno, Nevada
- New Hampshire Vocational-Technical College, Claremont, New Hampshire
- St. Barnabas Hospital Medical Center, Livingston, New Jersey

LVN/LPN Programs (continued):

Dutchess County BOCES Occupational Center, Poughkeepsie, New York
Anson Technical Institute, Ansonville, North Carolina
Sampson Technical Institute, Clinton, North Carolina
Fayetteville Technical School, Fayetteville, North Carolina
Pitt Technical Institute, Greenville, North Carolina
Southwestern Technical Institute, Sylva, North Carolina
Cape Fear Technical Institute, Wilmington, North Carolina
Southeastern Ohio School of Practical Nursing, Nelsonville, Ohio
Emerson School, Oklahoma City, Oklahoma
Bethlehem Area Vocational and Technical School, Bethlehem, Pennsylvania
Carlisle Hospital, Carlisle, Pennsylvania
Franklin County Area Vocational and Technical School, Chambersburg, Pennsylvania
Chester Upland School District, Chester, Pennsylvania
Hanover Borough School District, Hanover, Pennsylvania
Greater Johnstown Area Vocational and Educational Institute, Johnstown, Pennsylvania
Juniata Mifflin County Area Vocational-Technical School, Lewistown, Pennsylvania
Crawford County Area Vocational and Technical School, Meadville, Pennsylvania
Lawrence County Area Vocational Technical School, New Castle, Pennsylvania
Centre County Vocational and Technical Institute, Pleasant Gap, Pennsylvania
Somerset Area School District, Somerset, Pennsylvania
Greene County Area Vocational Technical School, Waynesburg, Pennsylvania
Williamsport Area Community College, Williamsport, Pennsylvania
Aiken County School of Practical Nursing, Aiken, South Carolina
Dillon County Area Vocational Center, Dillon, South Carolina
Area Two Vocational Center, Loris, South Carolina
Pierre School of Practical Nursing, Pierre, South Dakota
Rapid City Industrial School District, Rapid City, South Dakota
Independent School District, Lubbock, Texas
Mineral Wells Independent School District, Mineral Wells, Texas
Waynesboro Community School, Waynesboro, Virginia
Skagit Valley College, Mount Vernon, Washington
Monongalia County Vocational Technical Center, Morgantown, West Virginia
McDowell County Technical/Vocational Center, Welch, West Virginia
Sacred Heart School, Milwaukee, Wisconsin
Lakeshore Technical Institute, Sheboygan, Wisconsin

To determine the number of schools adopting the books published by the Allied Health Professions Project, the 1,520 book sales invoiced from May 1, 1972, to May 1, 1973, were analyzed for purchases in class-size quantities, shown as follows (exclusive of the foregoing list for *Nursing Skills*):

Dental Hygiene: Detection and Removal of Calculus	29
Secondary School Allied Health Occupations Curriculum	21
Medical Records Technician Curriculum	14
Medical Technologist Curriculum	3

The specific schools adopting these materials are listed below:

Dental Hygiene

Rangely College, Rangely, Colorado	25
Los Angeles City College, Los Angeles, California	25
Hudson Valley Community College, Troy, New York	33
Forsyth Dental Center, Boston, Massachusetts	140
Westbrook Junior College, Portland, Maine	59
Miami Dade Junior College, Miami, Florida	61
State University of New York, Farmingdale, New York	104
Cabrillo College, Aptos, California	55
Cerritos College, Norwalk, California	24
Portland Community College, Portland, Oregon	33
Westbrook College, Portland, Maine	59
University of Southern California, Los Angeles, California	215
Clark College, Vancouver, Washington	30
University of Washington, Seattle, Washington	126
Maricopa County Community College, Phoenix, Arizona	15
Erie Community College, North Campus, Buffalo, New York	15
Middlesex County College, Edison, New Jersey	6
Guilford Technical Institute, Learning Resource Center, Jamestown, North Carolina	3
Palm Beach Junior College, Lake Worth, Florida	30
Chabot College, Hayward, California	18
Kellogg Community College, Battle Creek, Michigan	22
Sacramento City College, Scaramento, California	6
Prairie State College, Chicago Heights, Illinois	24
Foothill College, Los Altos Hills, California	22
Phoenix College, Phoenix, Arizona	50
Fresno City College, Fresno, California	22
Lane Community College, Eugene, Oregon	15
New York City Community College, Brooklyn, New York	30
University of Pennsylvania, School of Dental Medicine, Philadelphia, Pennsylvania	85

Secondary School Allied Health Occupations

Jefferson Union High School District, Daly City, California	30
Gallup-McKinley County Schools, Gallup, New Mexico	28
National Chicano Health Organization, Los Angeles, California	6
North High School, Riverside, California	30
Beverly Hills High School, Beverly Hills, California	75
Fremont High School, Los Angeles, California	75
Jordan High School, Los Angeles, California	75
Lincoln High School, Los Angeles, California	75
Polytechnic High School, Long Beach, California	75
El Centro Union High School, El Centro, California	50

Secondary School Allied Health Occupations (continued)

Bakersfield Union High School, Bakersfield, California	50
Fresno Unified School District, Fresno, California	75
Rialto Union High School, Rialto, California	25
Coronado High School, Coronado, California	25
San Mateo Union High School District, San Mateo, California	75
Coachella Valley High School, Coachella, California	25
Corona-Norco High School District, Corona, California	25
Venice High School, Los Angeles, California	25
Chico Unified School District, Chico, California	25
Clovis Unified School District, Clovis, California	25
New Haven Unified School District, Union City, California	25

Medical Records

Portland Community College, Portland, Oregon	20
University of Pittsburgh, Pittsburgh, Pennsylvania	20
Indiana University Medical Center, Indianapolis, Indiana	5
St. John's Hickey Memorial Hospital, Anderson, Indiana	5
Community College, Allegheny Campus, Pittsburgh, Pennsylvania	5
Greenville Technical Education Center, Greenville, South Carolina	25
Hinds Junior College, Raymond, Mississippi	20
New Castle County Vocational-Technical High School, Wilmington, Delaware	10
Montana State University Nursing School, Bozeman, Montana	5
Spokane Community College, Spokane, Washington	18
East Carolina University, School of Allied Health, Greenville, North Carolina	20
Los Angeles Valley College, Van Nuys, California	40
Community College of Allegheny County, Pittsburgh, Pennsylvania	40
Brookside Hospital, San Pablo, California	10

Medical Technology – Specimen Processing

Venice High School, Los Angeles, California	30
Cuyahoga Valley Joint Vocational School, Brecksville, Ohio	50
California Lutheran College, Thousand Oaks, California	25

CHAPTER IV. CONCLUSIONS

A. SPECIFIC OBJECTIVES

The specific objectives of the Allied Health Professions Project were:

1. To identify by job or task analysis the curricula for a group of selected allied health occupations, and to determine performance standards for required skills and knowledges for each, the occupations to be selected on the basis of national and local need.
2. To develop innovative continuing education programs for each occupation, with maximum vertical and horizontal articulation, utilizing autotutorial, polysensory multimedia, and other types of teaching materials as appropriate.
3. To train teachers in the use of the new programs and materials by means of seminars and teacher-training workshops.
4. To test the instructional materials in junior colleges and health-care facilities in order to evaluate their effectiveness in training students to achieve specific performance objectives.
5. To develop and evaluate preservice education programs based on the curricula and materials prepared for use in the continuing education programs, and to train preservice teachers.
6. To make the curricula and instructional materials available on a nationwide scale, and to establish a procedure for maintaining them current with changes and new research findings in the allied health occupations, with provisions for rapid incorporation of new content into the educational programs for the several occupations.

B. ACHIEVEMENT OF OBJECTIVES

Achievement of objectives was as follows:

1. Complete occupational analyses (based on national surveys made with questionnaires developed from task inventories) were prepared for 18 allied health occupations. One task inventory, Lower Extremities Orthotics, was not published, and the three dental auxiliary occupations were combined into one volume, resulting in a total of 15 separate publications. Task inventories were developed for 24 allied health occupations. All were published in one volume. In the initial planning, occupational analyses for 16 occupations were believed to be the most that could be accomplished, but it was possible to exceed this estimate by two. However, task inventories are not as difficult and expensive as complete occupational analyses based on national surveys, so it was possible to complete 24. These occupational analyses and task inventories have been distributed nationwide, as reported in an earlier section. Evaluation questionnaires

enclosed with the first printing of each occupational analysis were returned by many of the recipients, and we learned that in addition to being useful in curriculum construction, these materials were found useful in making job descriptions, salary adjustments, and personnel assignments, as well as adjusting jurisdictional problems, establishing standard job titles, developing inservice training programs in health-care institutions, and many other uses not anticipated when the materials were developed. A summary of the status of the work on each occupation in terms of percent completion is tabulated as follows:

Percent Completion of Development of Allied Health Occupations Instructional Materials

Clinical Occupations:

Occupation	Task Inventory	Occupational Analysis	Instructional Materials
Nurse	100%	100%	75%*
Community Health Nurse	100%	0%	0%
Coronary Care Nurse	0%	0%	0%
Kidney Dialysis Nurse Assistant	0%	0%	0%
Rehabilitation Nurse	0%	0%	0%
Inhalation Therapy	100%	100%	50%
Clinical Laboratory Technician	100%	100%	75%
Electrocardiographic Technician	100%	0%	75%
Dental Hygienist	100%	100%	75%
Radiology Technician	100%	100%	0%
Assistant Medical Social Worker	100%	100%	0%
Electroencephalographic Technician	100%	100%	0%
Physician's Assistant	100%	0%	0%
Hospital Ward Administration	100%	100%	0%
Medical Office Assistant (private office)	100%	100%	0%
Dental Technician	100%	100%	10%
Physical Therapist Assistant	0%	0%	0%
Occupational Therapy Assistant	0%	0%	0%
Prosthetic Technician	0%	0%	0%
Operating Room Technician	0%	0%	0%
Dental Assistant	100%	100%	0%

---

*Contracted to private publishers

Clinical Occupations (continued):

Occupation	Task Inventory	Occupational Analysis	Instructional Materials
Electromyographic Technician	0%	0%	0%
Rehabilitation Counselor Assistant	0%	0%	0%
Cardio-Pulmonary Technician	0%	0%	0%
Gastroenterologist Assistant	100%	100%	100%*
Lower Extremities Orthotic Technician	100%	100%**	100%*
Spinal Orthotic Technician	0%	0%	0%
Supportive Occupations:			
Biomedical Photographer	100%	0%	0%
Hospital Central Service Technician	100%	0%	0%
Hospital Engineering Maintenance Tech.	100%	100%	0%
Hospital Food Service Worker	100%	100%	0%
Hospital Admissions Technician	100%	0%	0%
Hospital Business Office Worker:			
Patient Related	100%	0%	0%
General	100%	0%	0%
Hospital Housekeeper	100%	0%	0%
Hospital Laundry and Linen Worker	100%	0%	0%
Medical Records Technician	100%	100%	90%
Hospital Pharmacy Technician	100%	100%	50%
Hospital Purchasing Technician	100%	100%	50%
Sanitation Technician:			
Health-Care Facility	100%	0%	0%
Public Health	100%	0%	0%

---

*Contracted to private publishers

**Not published

Secondary School Allied Health Pilot and Demonstration Project Publications, Completed and Available:

Secondary Schools Allied Health Program, Student Manual
Secondary Schools Allied Health Program, Teacher Manual
Operation of a Secondary School Allied Health Career Program
Evaluative Report on Phase I of the Secondary Schools Project
Evaluative Report on Phase II of the Secondary Schools Project
A New Source of Manpower (descriptive brochure)
Student Training Record Booklets:
(Nursing, Central Service, Hospital Business Office, Physical Therapy Aide, Inhalation Therapy Aide, Personnel Training Aide, Hospital Refrigeration and Air Conditioning Aide, Hospital Pharmacy Technician, Occupational Therapy Aide, Radiology Aide, Clinical Laboratory Assistant)

The goals of task-oriented instruction are "more learning in less time with greater retention." These goals can best be achieved through the use of task-oriented teaching on an individualized instruction basis, and all of the instructional materials developed by the project are designed to make individual instruction and unrestricted individual progress as efficient as possible.

The success of the nursing curriculum established the task-oriented pattern subsequently followed in developing curricula and materials for other allied health occupations.

The development and dissemination of the UCLA system of task-oriented instruction has raised many questions concerning the traditional subject-oriented system of organizing curricula for health occupations. The relevance and applicability of much of the required "basic science" is being challenged, for example. The custom of basing approval of courses and curricula on fixed numbers of clock hours rather than demonstrated ability to perform is being closely examined by many in the health occupation education field. Evaluating students by use of performance tests as well as written examinations is gaining greater acceptance than was previously the case. Adoption of these changes by health occupation education institutions is relatively easy in those of the "skill center" type where the policy is to get the student trained and on a job as quickly as possible. It becomes increasingly complicated in traditional schools and colleges that are bound by established graduation and accreditation requirements. These restrictions also make it difficult to introduce the "career ladder" concept which is aimed at eliminating "dead-end" jobs and making it possible for the worker to progress upward without having to backtrack or repeat courses already mastered.

2. The goals of developing preservice and continuing education programs that would provide the student with the opportunity to start at the beginning level of a health-care occupation and progress to the highest level at a pace best suited to his ambition and ability were achieved in the curriculum and instructional materials developed for nursing. These have been described earlier in this report, and have proved successful (as evidenced by the large demand for and use of the materials).

The innovative aspect of the system is the development and use of task-oriented instruction. The emphasis is always on learning to perform tasks that contribute to the welfare of the patient. Basic science and theoretical knowledge are taught on a task-oriented basis along with the skills. The test applied to scientific and theoretical material is the question, "What do you *do* with it?" The solution of a problem by applying knowledge of scientific information is *performing a task*. The mere possession of such knowledge in itself is of little value to the nurse; it's what he or she can *do* with it that counts. When he or she *does* something with it, a task is being performed.

Training teachers in the use of task-oriented instructional materials could not be undertaken until work had advanced to the point where materials were available. This occurred first in the nursing program, and teacher training in the use of the materials was combined with testing them. St. John's Hospital in Santa Monica and Santa Monica City College were used for the first tryout of the nursing materials (duplicated in draft form and limited quantities). The Associate Director for Nursing trained the teachers and worked with them in conducting two successive classes for training Nurse Aides. These were successful in demonstrating the efficiency of the task-oriented approach, and also revealed a number of necessary changes to improve the program, all of which were incorporated into the final version of the curriculum. Subsequently, teachers were trained and the curriculum was tried out in seventeen other test sites in various parts of the country, and feedback from these trials produced additional changes that improved the curriculum. The two-volume work was then published and widely accepted; more than 140 schools have adopted it as of January 1, 1973.

Requests for teacher-training assistance were too great for the limited resources of the project to finance. Some help came from the Clinical Instructor Training Program, a 12-hour course in on-the-job teaching for clinical instructors in health-care facilities in which the curriculum materials available were used. This program was conducted under a grant from the Social and Rehabilitation Service. The California Nurses Foundation obtained a grant from the U.S. Public Health Service to conduct a series of six workshops for nurses in convalescent hospitals in the Southern California area to train instructors in the use of the nursing curriculum for training Nurse Aides on the job. U.S. Public Health Service grants financed two workshops for a variety of health-care personnel in South Dakota. Similar grants supported workshops in Arizona, New Mexico, and Georgia. These were all conducted by UCLA personnel.

While they are a start, these teacher-training efforts fall woefully short of the objective of training all the teachers who are using the nursing curriculum.

It has been impossible to do any teacher training with the 29 schools that have adopted *Dental Hygiene: Detection and Removal of Calculus.* This manual is about 25 percent of the total curriculum planned, and the program ended before it could be completed. The Medical Records Technician Curriculum (also incomplete) has been adopted by 14 schools and we have been unable to do anything to help the teachers in these schools.

It can be said that the project has succeeded in developing and trying out a teacher-training program that has proved to be effective, but the job of reaching all of the teachers who need it is a major project in itself, and should be treated as such.

4. The objective of making the instructional materials developed by AHPP available on a national scale has been achieved with considerable success, as evidenced by the data on distribution discussed earlier in this report. The objective of keeping them up to date through regular reviews and revisions is impossible to achieve without funding for an ongoing organization and staff to do the work. Income produced by royalties from sales of materials turned over to private publishers would be substantial if enough could be completed and published. At this time, it appears that one to two more years of subsidized work would be required to arrive at a balance between royalty income and the expense of a small supportive staff.

5. A report published by Educational Projects, Incorporated, bears testimony to the workability of the AHPP methodology. The Pittsburgh project utilized the task inventories originally developed by AHPP, and served to further validate the value of these inventories. Pertinent excerpts from the EPI report are incorporated as Appendix C.

6. In summary, the Allied Health Professions Project succeeded in developing a new approach to occupational and task analysis, an innovative task-oriented method of preparing instructional materials based on those analyses, and a task-oriented approach to increasing the efficiency of students learning through the use of these materials in task-oriented teaching, with emphasis on individualized instruction and on vertical and horizontal mobility in pursuit of careers.

CHAPTER V. RECOMMENDATIONS

On the basis of findings and experiences during the conduct of the Allied Health Professions Project from 1968 through 1972, the following recommendations for further activity are offered:

1. Complete all instructional materials started but not finished when the program terminated.

2. Establish and maintain a small Allied Health Occupations instructional materials office with staff adequate to manage the maintenance and updating of all existing materials and development of new materials as needs arise.

3. Initiate a program independent of the Allied Health Professions Project to evaluate the work done by the project.

4. Initiate a nationwide program of teacher-training workshops to train teachers in the use of the curriculum materials developed by the project.

5. Continue the policy of turning over publications to commercial publishers after they have been tested and validated by the project.

Appendix A. Advisory Committees and Cooperating Institutions

198, 199

NATIONAL ADVISORY COMMITTEE

Phillip L. Williams, Committee Chairman
Vice President, The Times-Mirror Company
Los Angeles, California

Lowell Burkett, Executive Director
American Vocational Association
Washington, D.C.

L.M. Detmer, Director
Bureau of Health Manpower and Education
American Hospital Association, Chicago, Illinois

Dale Garell, M.D.
Children's Hospital
Los Angeles, California

John F. Henning, Executive Secretary-Treasurer
California Federation of Labor
San Francisco, California

Joseph Kadish, Ph.D., Acting Chief
Education Program Development Branch
National Institutes of Health, Washington, D.C.

Bernard F. Kamins
Public Relations Consultant
Beverly Hills, California

Ralph C. Kuhli, Director
Department of Allied Medical Professions and Services
American Medical Association, Chicago, Illinois

Leon Lewis, Chief
Division of Occupational Analysis and Employer Services
Manpower Administration, Department of Labor, Washington, D.C.

Walter J. McNerney, President
Blue Cross Association
Chicago, Illinois

Peter G. Meek, Executive Director
National Health Council
New York, New York

200,

Mark J. Musser, M.D., Chief Medical Director
Department of Medicine and Surgery
Veterans Administration, Washington, D.C.

Leroy Pesch, M.D.
Deputy Assistant Secretary for Health Manpower
Department of Health, Education, and Welfare, Washington, D.C.

Helen K. Powers, Education Program Specialist
Health Occupations Education
U.S. Office of Education, Washington, D.C.

William M. Samuels, Executive Director
Association of Schools of Allied Health Professions
Washington, D.C.

Dr. William Shannon, Acting Executive Director
American Association of Junior Colleges
Washington, D.C.

Elizabeth Simpson, Ph.D.
Bureau of Research, U.S. Office of Education
Washington, D.C.

Carl Strouse, M.D. (deceased)
Chief of Staff
Mount Sinai Hospital, Los Angeles, California

John D. Twiname, Commissioner
Social and Rehabilitation Service
Department of Health, Education, and Welfare, Washington, D.C.

C. Gordon Watson, D.D.S., Executive Director
American Dental Association
Chicago, Illinois

Richard S. Wilbur, M.D., Assistant Secretary of Defense
Department of Defense
Washington, D.C.

In addition, a National Technical Advisory Committee of practitioners, educators, and other knowledgeable individuals provided guidance and counsel in the research and curriculum development activities for each of the occupations included in the Allied Health Professions Project program. In most cases, these committees worked with AHPP staff assigned to the specific occupation to establish a basic task list which, when validated by national survey, would provide the foundation for curriculum development.

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR THE NURSING OCCUPATIONS

Miss Georgee H. DeChow, Chairman
Director, Department of Nursing, Manatee Junior College
Brandenton, Florida

Dr. Hazle W. Blakeney, Chairman
Department of Nursing, Essex Community College, Newark, New Jersey

Miss Eleanor Carlson, Head
Department of Nursing, Morton Junior College, Cicero, Illinois

Miss Shirley Conklin, Coordinator
Registered Nursing Program, College of Marin, Kentfield, California

Mrs. Floretta E. Cunegin, Coordinator
Nursing Program, Oakland Community College, Union Lake, Michigan

Dr. Betty L. Forest, Chairman
Department of Nursing, Quinsigamond Community College
Worcester, Massachusetts

Mr. Gerald L. Griffin, Director
Department of Associate Degree Programs, National League for Nursing
New York, New York

Mr. William F. Hartnett, Assistant Administrator for Nursing Services
Riverside Methodist Hospital, Columbus, Ohio

Mrs. Mildred Holloway, Chairman
Department of Nursing, Pierce College, Woodland Hills, California

Mrs. Crystal Lange, Associate Professor
Department of Nursing, Delta College, University Center, Michigan

Mrs. Judy Ory, Associate Professor
California State College, Los Angeles, California

Mrs. Sharon Reeder, Assistant Professor
University of California, Los Angeles, California

Mrs. Gerry White, Director
Nursing Education, Dallas County Junior College District, Dallas, Texas

NATIONAL TECHNICAL ADVISORY COMMITTEE
FOR CLINICAL LABORATORY OCCUPATIONS

Jerome Benson, M.D. (Representing American Society of Clinical
Pathologists), Miami Heart Institute, Miami Beach, Florida

Nellie May Bering, M.A., MT (ASCP)
Chairman and Associate Professor, Department of Medical Technology
College of Allied Health Professions, Temple University
Philadelphia, Pennsylvania

Sarah C. Hurst, Consultant
Technical and Health Occupations Section
Florida Department of Education, Tallahassee, Florida

Harold B. Levine, Director of Research in Medical Education
The University of Texas Medical Branch, Galveston, Texas

Elizabeth Lundgren, MT (ASCP)
High School, Junior College, Vocational Programs in Allied Health
Professions, Florida Department of Education, Tallahassee, Florida

Jon V. Straumfjord, M.D. (Representing College of American Pathologists)
Chairman, Department of Clinical Pathology
Director, School of Laboratory Science
University of Alabama Medical Center, Birmingham, Alabama

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR AUXILIARY DENTAL OCCUPATIONS

Mrs. Joy Ward (Dental Hygienist)
Director of Dental Hygiene Education, Los Angeles City College
Los Angeles, California

Thomas W. Beckham, Director of Education
American Dental Association, Chicago, Illinois

Dr. Nathan H. Boortz, Chairman
Dental Auxiliary Curriculum Planning Committee
California Community Colleges
Director, Technical Information
Foothill Junior College District, Los Altos Hills, California

Robert M. Gertz, Acting Executive Director
Association of Schools of Allied Health Professions, Washington, D.C.

Miss Lois K. Kryger, Dental Assisting Consultant
Division of Dental Health, National Institutes of Health
Bethesda, Maryland

Robert R. Montgomery, D.D.S.
Coordinator, Dental Assistants Program
Oakland Community College, Highland Campus
Union Lake, Michigan

Miss Margaret Ryan, Director, Division of Education
American Dental Hygienist Association, Chicago, Illinois

Charles Strother, D.D.S. (Practicing Dentist)
Chairman, Council on Dental Education
Southern California Dental Association, Glendale, California

William R. Woodworth
Dental Laboratory Training Program, Los Angeles City College
Los Angeles, California

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR EEG TECHNICIANS

Mrs. Dorothea Brittenham
Editor, American Journal of EEG Technology
Barrow Neurological Institute, Phoenix, Arizona

David Daly, M.D.
Southwestern Medical School, University of Texas, Dallas, Texas

Charles Henry, Ph.D.
Cleveland Clinic, Cleveland, Ohio

H.D. Jameson, M.D.
Assistant Professor of Neurology, Department of Neurology
College of Medicine, University of Kentucky, Lexington, Kentucky

John R. Knott, Ph.D.
Project Director, EEG Technician Training Program
University of Iowa, Iowa City, Iowa

Mr. G. Lawrence Mowery
Oakland, California

Mrs. Dorothy Sauer
EEG Department, Mayo Clinic, Rochester, Minnesota

NATIONAL TECHNICAL ADVISORY COMMITTEE
FOR HOSPITAL RADIOLOGIC TECHNOLOGY

Carolyn Barber, R.T.
School of Radiologic Technology
Foothill Junior College, Los Altos Hills, California

Del Henderson, R.T.
Associate in Radiology, Department of Diagnostic Radiology
Albert B. Chandler Medical School, University of Kentucky
Lexington, Kentucky

Joseph Jorgens, M.D.
Chief, Radiology Service, Wadsworth Hospital
Veterans Administration Center, Los Angeles, California

Marian McDaniel, R.T.
Coordinator, Radiologic Technology
Fullerton Junior College, Fullerton, California

Charles Nice, Jr., M.D.
Director, Department of Radiology, Charity Hospital
New Orleans, Louisiana

Richard A. Olsen, R.T.
Administrative Assistant, Department of Radiology
The Johns Hopkins Hospital, Baltimore, Maryland

Robert W. Olson, M.D.
Santa Barbara, California
(Representing American College of Radiology)

Ted Ott, C.R.T.
Radiology, University of California, Los Angeles
Los Angeles, California

John R. Tanner, M.D.
Miami, Florida

NATIONAL TECHNICAL ADVISORY COMMITTEE
FOR SOCIAL SERVICE OCCUPATIONS

Mrs. Esther Spencer, Chairman
Chief, Bureau of Public Health Social Work
State Department of Public Health, Berkeley, California

Dr. Leon Bernstein
Office of Research and Statistics, Social Security Administration
Washington, D.C.

Miss Grace Nicholls
Associate Director of Social Service, Massachusetts General Hospital
Boston, Massachusetts

Peter Farago, M.D.
Coordinator for Health Education Programs
Presbyterian-St. Luke's Hospital, Chicago, Illinois

Professor Kay Dea
Graduate School of Social Work, University of Utah
Salt Lake City, Utah

Donald Feldstein, Consultant on Undergraduate Education
Council on Social Work Education, New York, New York

Dale Garell, M.D.
Director, Division of Adolescent Medicine, Children's Hospital
Los Angeles, California

James Haughton, M.D.
Executive Director, Health and Hospitals Governing Commission of
Cook County, Chicago, Illinois

Mr. Harold Light
Long Island Jewish Medical Center, New Hyde Park, New York

Harold L. McPheeters, M.D.
Associate Director for Mental Health Training and Research
Southern Regional Education Board, Atlanta, Georgia

Mr. Charles R. Roberts, Chief
Social Work Services, Veterans Administration Hospital (Wadsworth)
Los Angeles, California

Miss Loia Selby (Alternate)
Professor of Social Work, School of Social Work
University of Southern California, Los Angeles, California

Sumner M. Rosen, Ph.D., Director
Training Incentive Payments Program
Institute of Public Administration, New York, New York

Mr. Dutton Teague, M.S.W.
University of Louisville, Kent School of Social Work
Louisville, Kentucky

Mr. Stanley W. Boucher (Alternate)
Director, Mental Health Continuation Education Program
Western Interstate Commission for Higher Education
University East Campus, Boulder, Colorado

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR MEDICAL RECORDS

Laura Anne Biglow, R.R.L.
Director, Academic Department
American Association of Medical Record Librarians, Chicago, Illinois

Myra Enkelis, R.R.L.
Director, Medical Records Department
Columbia Presbyterian Hospital, New York, New York

Sidney Goldin, M.P.H.
Associate Director, Mt. Sinai Hospital of Greater Miami
Miami, Florida

Robert Moore, M.P.H.
Program Analyst, Division of State Operations
Bureau of Health Insurance, Social Security Administration
Baltimore, Maryland

Mary Rose, R.R.L.
Director, Medical Records Department
Cedars of Lebanon Hospital, Los Angeles, California

Margaret Sabl, R.R.L.
Director, Medical Records Technican Program
Fullerton Junior College, Fullerton, California

Virgil Slee, M.D., Director
Commission on Professional and Hospital Activities
Ann Arbor, Michigan

Richard Yoder, M.D.
Department of Community Medicine
University of California Hospital, San Diego, California

Faye Brown, R.R.L.
Director, Medical Records Department
Loma Linda Sanitarium and Hospital, Loma Linda, California

NATIONAL TECHNICAL ADVISORY COMMITTEE
FOR MEDICAL ASSISTING

Cheryl Burrus, Medical Assistant
San Jose, California

Fern Christensen, CMA
Anaheim, California
Marian G. Cooper, CMA
Chairman, AAMA, Curriculum Review Committee
Pittsburgh, Pennsylvania

Ruth H. Dize, Former President, AAMA
Norfolk, Virginia

D.J. Ettenborough, Medical Secretary/Research Assistant
Stanford Medical Center, Palo Alto, California

L.C. Euler, Office Manager/Medical Assistant
Culver City, California

Geneva Leech, Medical Assistant
Campbell, California

Nina Reightley, Office Manager/Medical Assistant
Glendale, California

W. Schwartz, CMA – Medical Assistant
Los Angeles, California

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR PHARMACY TECHNICIAN

Dr. Joseph H. Beckerman
Chief of Pharmacy Services, UCLA Center for the Health Sciences
University of California, Los Angeles

Mr. Ralph Boehm, Chief, Staff Resources and Development Division
Pharmacy Division, Veterans Administration, Washington, D.C.

Dr. Edward S. Brady, Associate Dean
School of Pharmacy, University of Southern California
Los Angeles, California

Dr. Donald C. Brodie
Director of Drug-Related Studies
National Center for Health Services Research and Development
Rockville, Maryland

Roger W. Cain, R. Ph., Executive Director
Illinois Pharmaceutical Association, Chicago, Illinois

Sister M. Ferdinand Clark
Administrator, Mercy Hospital, Pittsburgh, Pennsylvania

Mr. Alfred J. Duncan, Executive Secretary
Arizona State Board of Pharmacy, Phoenix, Arizona

Sister Jane M. Durgin
Director, Pharmacy Service, Mercy Hospital, Rockville Center, New York

Major G. Jay Lafleur, U.S.A.
Chief, Pharmacy Branch, Department of Medicine and Surgery
U.S.A. Medical Field Service School, Fort Sam Houston, Texas

Mr. Fred T. Maheffey, Executive Director-Secretary
National Association of Boards of Pharmacy, Chicago, Illinois

Dr. Robert F. Maronde
Professor of Medicine, School of Medicine
University of Southern California, Los Angeles, California

Mr. Joseph A. Oddis, Executive Secretary
American Society of Hospital Pharmacists, Washington, D.C.

Dr. Robert L. Ravin, Director of Pharmaceutical Services
St. Joseph Mercy Hospital, Ann Arbor, Michigan

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR HOSPITAL FOOD SERVICE

Mrs. Hilda Watson Gifford, Director
Project FEAST, San Francisco, California

Mr. Richard Jack
Director of Operations Services in Hospital Food Management
Automatic Retailers of America, Inc., Philadelphia, Pennsylvania

Dr. Lendal H. Ketschevar
Professor in Food Service Administration, Seeley Lake, Montana

Miss Alice H. Lutkus
Food Service Supervisor Course Director
The American Dietetic Association, Chicago, Illinois

Miss Dott McGill, Food Service Coordinator
Kaiser Foundation Hospitals, Los Angeles, California

Mrs. Bonnie B. Miller, Staff Associate, Hospital Food Service
Division of Professional Practice, American Hospital Association
Chicago, Illinois

Mrs. Martha Schaffer, Food Service Supervisor
Dietary Department, University of California
Los Angeles, California

Mr. Raymond L. Simescu, Director of Food Service
Oakland Community College, Farmington, Michigan

Dr. John M. Welch
Professor and Extension Specialist in Food Service Management
Cooperative Extension Service, College of Agriculture
University of Missouri, Columbia, Missouri

Mrs. Nell M. Woodward, Director
Food Service and Hotel Management Department
Orange Coast College, Costa Mesa, California

NATIONAL TECHNICAL ADVISORY COMMITTEE FOR ENGINEERING MAINTENANCE

Edward J. Bertz, Director
Division of Plant Operations, American Hospital Association
Chicago, Illinois

Charles L. Drake, Director
Engineering Services, San Antonio Community Hospital
Upland, California

Theodore E. DuBoise
Administrative Assistant for Ancillary Services
La Mirada Community Hospital, La Mirada, California

Paul J. Hopper
Director of Plant Operations, Centinela Valley Community Hospital
Inglewood, California

Vernon Knutson, President
American Society for Hospital Engineers, American Hospital Association
Chicago, Illinois

Christopher M. McGuire, Director of Engineering
Hospital of the Good Samaritan, Los Angeles, California

Robert J. Nast, Director
Division of Association Services, American Hospital Association
Chicago, Illinois

Stanley S. Tate, Superintendent of Plant Operations
Presbyterian Intercommunity Hospital, Whittier, California

Appendix B. Roster of All Staff Members From Start of Program

ROSTER OF ALL STAFF MEMBERS SINCE START OF AHPP

Miles H. Anderson, Ed.D., Director

Lorraine A. Adams, Field Coordinator

Phyllis E. Agran, M.A., M.P.H., Curriculum Consultant

T. David Ainsworth, Ph.D., Associate Director

Berna Atkisson, Secretary

Melvin L. Barlow, Ed.D., Principal Investigator

Dolores Barnum, Secretary

Stanley D. Beskin, Field Coordinator

Kaye Campbell, Secretary

Margaret Campbell, Secretary

Barbara R. Chrispin, Ed.D., Research Consultant

Thomas Cullen, Ph.D., Research Consultant

Earl DiCicco, B.A., Associate Director

Judy Dobson, Secretary

Mary H. Ellison, B.A., Chief Editor

Jerome Epstein, M.A., Writer

Clarence Fielstra, Ph.D., Evaluation Consultant

Thomas E. Freeland, Ph.D., Senior Associate Director

Katherine Goldsmith, Dr.P.H., Deputy Director

Minna L. Gosman, M.P.H., Associate Director

Sylva Grossman, B.A., Editor

John K. Harris, Draftsman

Robert Henrich, M.P.H., Senior Associate Director

Melanie Herrick, Secretary

Marianne Hester, Secretary

William Hudson, B.A., Deputy Director (Secondary Schools Project)

Mary E. Jensen, R.N., M.A., Associate Director

Charilyn Johnston, Secretary

Susan Kaufmann, Secretary

Gail R. Kimbrel, Secretary

Richard D. Kingston, D.D.S., Senior Associate Director

Seba H. Kolb, B.A., Editor

Eileen R. Kuris, Senior Typist

Joel N. Kuritsky, Survey Worker

Candi Little, Senior Typist

Shirley Majchrzak, M.A., Consultant

Richard A. McCartney, M.P.H., Associate Director

Najmuddin Merchant, M.A., Consultant

Marilyn Morgan, M.P.H., Field Coordinator

Winifred Muhs, Office Manager

Faye Munoz, M.A., M.S.W., Associate Director

Anna Michiko Pattison, M.S., R.D.H., Associate Director

Maude C. Peronneau, R.N., Field Coordinator

Donna Rivera, Secretary

Doris Rosenthal, M.A., M.P.H., Curriculum Consultant

Louise Rossi, Senior Typist

Elaine Sturdivant, Secretary

Howard Taub, M.T., M.S., Associate Director

Patricia Thouin, M.P.H., Associate Director

Gregory Threadgill, B.A., Field Coordinator

Carol J. Tripp, Project Coordination Assistant

Diane E. Watson, M.A., Deputy Director (Secondary Schools Project)

Lucile A. Wood, R.N., M.S., Associate Director

Appendix C. Excerpts From the EPI Allied Health Professions Project Interim Report

(April 1972)

EDUCATIONAL PROJECTS, INCORPORATED

ALLIED HEALTH PROFESSIONS PROJECT

Funded by

The Sarah Mellon Scaife Foundation

and

Commonwealth of Pennsylvania

Department of Public Instruction

Bureau of Vocational, Technical and Continuing Education

Ancillary Project # 14-1021

155 North Craig Street
Pittsburgh, Pennsylvania 15213

April 1972

TABLE OF CONTENTS

Page

ACKNOWLEDGEMENT.. 1

PURPOSE OF INTERIM REPORT.. 2

FOREWORD... 3

BACKGROUND... 4

PROJECT GOAL... 5

APPROACH AND PROCEDURE... 6

INITIAL INDUSTRY SELECTED FOR FUNCTIONAL ANALYSIS.................. 7

Exhibit I - Allied Health Professions Curriculum Offered in Commonwealth of Pennsylvania.................. 11

Exhibit II - Completed Survey Instruments Received from the Health Care Facilities........................ 12

FUTURE DIRECTION OF THE PROJECT.................................... 13

PRESENTATION OF THE DATA AND ANALYSIS.............................. 14

NURSING.. N

- Overview.. N-1
- Summary of Background Data...................................... N-3
- Diversional, Therapeutic, and Assistance Activities............. N-4
  - Average Percent Performance................................. N-6
  - Rank Order.. N-7
- Safety and Comfort of the Patient............................... N-8
  - Average Percent Performance................................. N-16
  - Rank Order.. N-17
- Nutrition and Elimination....................................... N-18
  - Average Percent Performance................................. N-25
  - Rank Order.. N-26
- Treatments, Procedures, Medications, and Diagnostic Activities N-27
  - Average Percent Performance................................. N-36
  - Rank Order.. N-37
- Observation and Communication................................... N-38
  - Average Percent Performance................................. N-46
  - Rank Order.. N-47
- Administration, Coordination, and Housekeeping Functions........ N-48
  - Average Percent Performance................................. N-53
  - Rank Order.. N-54
- Summary... N-55

Page

RESPIRATORY CARE.. RC

Overview.. RC-1
Summary of Background Data.................................. RC-2
Administrative and Supervisory Tasks........................ RC-4
Education-Training-Research Tasks........................... RC-7
Diagnostic Techniques....................................... RC-10
Therapeutic Tasks... RC-15
Clerical and Miscellaneous Tasks............................ RC-20
Modal Difficulty Scores..................................... RC-23
Summary... RC-24

RADIOLOGY... R

Overview.. R-1
Summary of Background Data.................................. R-3
Radiology Tasks... R-4
Clerical Tasks.. R-14
Administrative Tasks.. R-17
Research Tasks.. R-23
Miscellaneous Tasks... R-25
Comments.. R-28

WARD MANAGEMENT... WM

Overview.. WM-1
Summary of Background Data.................................. WM-3
Clerical Functions - Record Keeping......................... WM-4
Clerical Functions - Communications......................... WM-8
Clerical Functions--Patient-Centered Activities............. WM-12
Clerical Functions - Supplies and Equipment................. WM-17
Clerical Functions - Safety and Sanitation.................. WM-18
Administrative Functions.................................... WM-20
Comments.. WM-27

ACKNOWLEDGEMENT

Educational Projects, Incorporated wishes to acknowledge the close cooperation and assistance obtained in the initial stage of our project from the Allied Health Professions Project of the University of California, Los Angeles, Division of Vocational Education, which was funded by the U. S. Department of Education under Research and Demonstration Grant 8-0627.

The task inventories reflected in this validation study were originally developed by the U.C.L.A. Project and were adapted for our use with the full knowledge and permission of the officials of the U.C.L.A. Project. It was mutually agreed that our efforts could be of benefit to the objective of improving the quality of preparation of competent technicians needed to assist in providing efficient health care services.

NURSING

Overview:

Of all of the occupational fields included in the current analysis, the Nursing field is the most clearly defined in structure, both by tradition and licensure. And yet, as the results of the UCLA study indicate (substantiated by the EPI results presented herein) Nursing is in a transitional period. Changes of practice in hospitals as to the use of various levels of Nursing personnel appear to be taking place. The positions of Registered Nurse, Licensed Practical Nurse, and Nurses Aide seem to be in the process of redefinition within the hospital structure, not by job description but more in terms of the actual performance. The direction of this redefinition is indicated through the comparison of the response pattern obtained and the assignment of appropriate occupational level by the UCLA National Advisory Committee.

EPI Sample:

The number of respondents surveyed in the Nursing area was by far the largest in the EPI study. In all, 133 instruments were returned with 46 in the Staff Nurse category; 41 in the Licensed Practical Nurse category; 45 in the Nurses Aide category; and one which was dropped as incomplete.

The average age, average years in the position, and average years in the occupation for each category indicates that the administrators chose the more experienced personnel for participation in the survey. The stability of the respondent group leads to a feeling that the results presented here are representative of the actual practice in the health care facilities.

The certification of the respondents was as expected. Only 2 in the Staff Nurse category obtained their certification through an Associate degree program while 4 were college graduates. Approximately 80% of the Practical Nurse group indicated as their source of training a one-year course administered by a hospital. In general, the Nurses Aide had no certification, and only approximately 40% indicated having received any training at all. These facts compare favorably with the results of the UCLA survey.

Results:

The following pages present the results of the EPI survey and summarize the UCLA results for comparative purposes. For ease of comparison, the presentation is divided into the same functional categories as was the UCLA study. These categories are:

A. Diversional, Therapeutic, and Assistance Activities;
B. Safety, and Comfort of the Patient;
C. Nutrition and Elimination;

D. Treatments, Procedures, Medications, and Diagnostic Activities;
E. Observation and Communication; and
F. Administration, Coordination, and Housekeeping Functions.

For each of the above categories a table is presented ranking the percentage of respondents of each occupational group according to the percentage of the group performing the tasks in that functional area. A second table for each category presents the average percentage performace of tasks for each of the occupational areas. Using these tables, an analysis of the occupational area which is most likely to perform tasks within a functional area can be accomplished.

In the UCLA study, performance of a task was based upon the respondent indicating that the task was performed either:

(1) daily/almost daily;
(2) several times per week;
(3) several times per month.

Any indication that the task was performed several times a year was omitted from the results. In the EPI results, this response was included in the data, on the basis that certain critical situations do not arise with a greater frequency than this, and that a measurement of performance of these critical tasks is important. As a result of this fact, the comparison of data between studies as shown on the chart will indicate, in some cases, a higher percentage response for the local sample. This variation is not significant in most cases.

NURSING

Summary of Background Data

Background Data		All Respondents		Registered Nurse		Licensed Practical Nurse		Nurse's Aide	
		EPI	UCLA	EPI	UCLA	EPI	UCLA	EPI	UCLA
1. Sample Size		132	398	46	137	41	130	45	131
2. Sex	Male	7	19	0	2	2	5	5	12
	Female	125	378	46	134	39	125	40	119
3. Age	Mean	34.1	-	29.2	-	35.9	-	37.4	-
4. Years in Position	Mean	3.1	-	2.1	-	3.3	-	3.9	-
5. Years in Occupation	Mean	6.4	-	7.0	-	6.4	-	5.8	-
6. Highest Level of Education									
Less than High School		17	60	-	2	4	19	13	39
High School or Equivalent		83	235	30	94	30	84	24	57
Some College		22	73	10	26	6	20	6	27
Associate Degree		3	5	2	5	-	-	1	-
Bachelor's Degree		4	15	4	14	-	1	-	-
Master's Degree		-	-	-	-	-	-	-	-
Ph.D. Degree		-	-	-	-	-	-	-	-
Other		2	-	-	-	1	-	1	-
No Answer		1	5	-	1	-	3	-	1
7. Technical or Training Programs									
On-the-Job		15	116	-	1	4	19	11	96
Military		3	-	-	-	1	-	2	-
Manufacturers		-	-	-	-	-	-	-	-
Vocational School		8	-	-	-	7	-	1	-
Certificate or Diploma		74	235	42	114	29	100	3	21
Other		7	-	4	-	2	-	1	-
None or No Answer		-	-	-	2	2	10	28	14
8. Certification									
RN		46	-	46	-	-	-	-	-
LPN		39	-	-	-	41	-	-	-
NA		5	-	-	-	-	-	5	
None		40	-	-	-	-	-	40	-
No Answer		2	-	-	-	1	-	-	-
9. Annual Salary									
Less than 2,000		1	-	-	-	-	-	1	-
2,000 - 3,999		7	139	-	6	1	41	6	92
4,000 - 5,999		62	166	1	49	27	82	34	35
6,000 - 7,999		31	77	22	75	9	2	-	-
8,000 - 9,999		19	-	19	-	-	-	-	-
10,000 - 11,999		1	3	1	3	-	-	-	-
12,000 - 15,000		-	-	-	-	-	-	-	-
More than 15,000									
None		11	-	3	-	4	-	4	-

Summary

1. The results of the EPI sample, when compared to those obtained in the UCLA study, indicate that the instrument does measure the tasks performed in the Nursing area. Those tasks which were added are really a restatement of the duties which are listed or implied in the tasks of the instrument.

2. There appears to be a difference between the local data and the UCLA data concerning the occupational level performing the tasks. For the functional areas of Safety and Comfort and Nutrition and Elimination, there appears to be a greater reliance locally upon the Registered Nurse, and a resulting lesser reliance on the Nurses Aide than was found in the UCLA study. As was previously mentioned, these functional areas are among those which by tradition defined the duties of a Nurse. The greater reliance upon the Registered Nurse for performance of these tasks may indicate a more traditional viewpoint of the Registered Nurse in Western Pennsylvania than is found in the areas sampled by the UCLA study.

3. The results of the study indicate a significant variance between actual practice on performance of tasks and the designation of occupational level by the UCLA National Advisory Committee. In analyzing those tasks with a performance response of greater than 15% in the total EPI sample, 26 are assigned to the Registered Nurse, and 84 to the Registered Nurse/Licensed Practical Nurse by the UCLA National Advisory Committee. Of this group of tasks, the EPI data indicates agreement (agreement is defined as less than 10% response for the level excluded by the National Advisory Committee) with the National Advisory Committee on 8 tasks for the Registered Nurse exclusively; and 28 tasks for the Registered Nurse/Licensed Practical Nurse designation. Thus, there appears to be a significant overlap of duties between occupational levels, with very few tasks clearly being defined as the responsibility of one level.

4. Considering the above comments, and the fact that of those tasks receiving a significant response, only 12 were not performed by Nurses Aides at all and only 47 received less than 10% response by Nurses Aides, it would appear that the Nurses Aide has a great responsibility. This broad responsibility for the Nurses Aide has not been addressed adequately in existing educational programs. For the most part, the Nurses Aides' education is left to an on-the-job training program, if any training is given at all. This is evidenced by the background data summary which indicates that 60% of the Nurses Aides indicated no specific training. From the EPI initial findings, it would appear that consideration might be given to the possibility of introducing course work at the secondary level for the training of Nurses Aides.

   Not analyzed, but perhaps of import in this analysis of the Nurses Aide is the amount of supervision received in performing the more critical tasks usually assigned to the Registered Nurse. A response to these tasks may have indicated that the Nurses Aide, in reality, assisted a Registered Nurse or Licensed Practical Nurse in performing the task. If this is the case, the results obtained do not necessarily indicate a shift in assignment which is as widespread as it appears initially. Further investigation is necessary before a conclusion can be reached.

5. Further sampling is required for the purpose of determining the extent of the occupational shift (if any), and task performance overlap at health care facilities of various types and sizes.